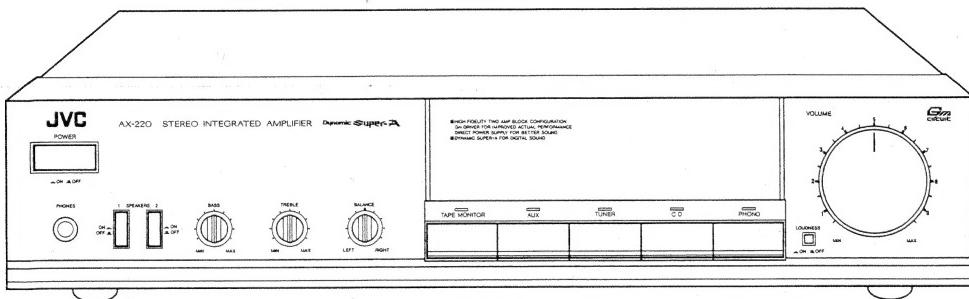


JVC

SERVICE MANUAL

STEREO INTEGRATED AMPLIFIER

MODEL No. **AX-220BK**



Contents

Page	Page		
Safety Precautions	1-2	Schematic Diagram.....	Insertion
Instruction Book	1-3	Internal Block Diagrams of ICs.....	Insertion
Removal Procedures.....	1-9	Connection Diagram	Insertion
Adjustment Procedures.....	1-10	Parts List.....	Separate Volume Insertion
		Block Diagram.....	1-11

Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (Δ) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges or the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

5. Leakage current check

(Electrical shock hazard testing)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

Do not use a line isolation transformer during this check.

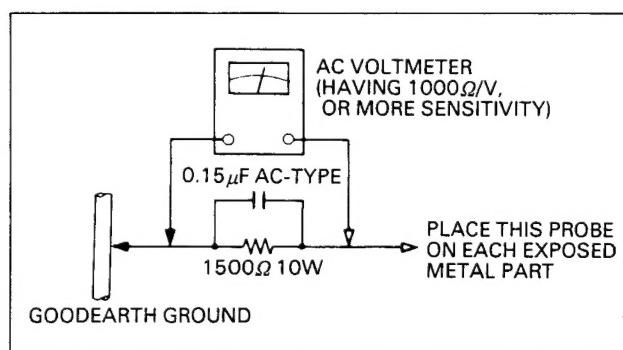
- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).

● Alternate check method.

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Use an AC line cord directly into the AC outlet. Connect a $1,500 \Omega$ 10 W resistor parallel by a $0.15 \mu\text{F}$ AC-type capacitor between an exposed metal part and a known good earth ground.

Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



CHECK THE VOLTAGE SELECTOR'S SETTING

(Except for U.S.A., Canada, Australia, U.K. and Continental Europe.)

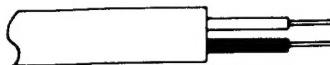
Before inserting the power plug, please check that the voltage selector's setting corresponds with the line voltage in your area. If it doesn't, be sure to reset the voltage selector before this equipment.

The voltage selector may be located on the rear or bottom of the unit, or underneath the platter.

CAUTION: Before setting the voltage selector to the proper voltage, disconnect the power plug.

IMPORTANT (In the United Kingdom)
Mains Supply (AC 240V~, 50 Hz only)**IMPORTANT**

Do not make any connection to the Larger Terminal coded E or Green. The wires in the mains lead are coloured in accordance with following code:



Blue to N(Neutral) or Black
Brown to L(Live) or Red

If these colours do not correspond with the terminal identifications of your plug, connect as follows:
Blue wire to terminal coded N(Neutral) or coloured Black.
Brown wire to terminal coded L(Live) or coloured Red.
If in doubt — consult a competent electrician.

CAUTION

To reduce the risk of electrical shocks, fire, etc.:

1. Do not remove screws, covers or cabinet.
2. Do not expose this appliance to rain or moisture.

ACHTUNG

Zur Verhinderung von elektrischen Schlägen
Brandgefahr usw.:

1. Keine Schrauben lösen oder Abdeckungen entfernen und nicht das Gehäuse öffnen.
2. Dieses Gerät weder Regen noch Feuchtigkeit aussetzen.

ATTENTION

Afin d'éviter tout risque d'électrocution, d'incendie etc.:

1. Ne pas enlever les vis ni les panneaux et ne pas ouvrir le coffret de l'appareil.
2. Ne pas exposer l'appareil à la pluie ni à l'humidité.

Thank you for purchasing this JVC product.
Before you begin operating this unit, please read the instructions carefully to be sure you get the best possible performance.
If you have any question, consult your JVC dealer.

Vielen Dank für den Kauf dieses JVC-Produkts.
Bitte lesen Sie diese Bedienungsanleitung sorgfältig,
bevor Sie dieses Gerät in Betrieb nehmen, um die
beste Leistung zu erhalten.
Falls Sie Fragen haben, wenden Sie sich bitte an
Ihren JVC-Fachhändler.

Tous nos compliments pour vous être procuré cet appareil de JVC.

Pour que vous puissiez obtenir les meilleures performances possibles, nous vous recommandons de lire attentivement la présente notice d'emploi avant de commencer à utiliser votre nouvel appareil.
En cas de question, consultez votre revendeur JVC.

IMPORTANT**1. Installation**

- Select a place which is level, dry and neither too hot nor too cold (between -5°C and 40°C/23°F and 104°F).
- Pay attention to good ventilation; putting things on the cabinet or using the amplifier in a cramped and poorly ventilated place may result in the temperature rising which may cause trouble.
- Do not allow a carpet, etc. to block the ventilation holes.
- Do not put it in a place subject to vibrations.

2. Power cord

- Check that the amplifier is set for your local supply voltage. If not, consult the dealer from whom you bought it.
- When unplugging from the wall outlet, always pull the plug, not the power cord.

3. Malfunctions, etc.

- There are no user serviceable parts inside. If anything goes wrong, unplug the power cord and consult your dealer.
- Do not insert any metallic object inside the amplifier.
- Do not allow water to get inside the amplifier.

WICHTIG**1. Aufstellung**

- Einen ebenen, trockenen und nicht zu kalten oder zu warmen (-5°C bis +40°C) Aufstellungsplatz wählen.
- Für ausreichende Ventilation sorgen. Keine Gegenstände auf dem Gerät ablegen oder auf andere Art die Ventilation behindern, andernfalls heizt sich das Gerät auf, wodurch Betriebsstörungen hervorgerufen werden können.
- Darauf achten, die Ventilationsöffnungen nicht mit einem Teppich etc. zu verschließen.
- Das Gerät an einem erschütterungsfreien Ort aufstellen.

2. Netzkabel

- Sichergehen, daß Verstärker auf die verfügbare Netzspannung eingestellt ist. Andernfalls den Verkäufer um Rat fragen.
- Das Netzkabel stets am Stecker, nie am Kabel abziehen.

3. Fehlfunktionen etc.

- Das Gerät enthält keinerlei Teile, die vom Benutzer gewartet werden können. Bei Störungen das Netzkabel abziehen, und einen JVC-Händler aufsuchen.
- Keine Metallgegenstände in das Gerät einführen.
- Keine Feuchtigkeit in das Gerät dringen lassen.

IMPORTANT**1. Installation**

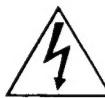
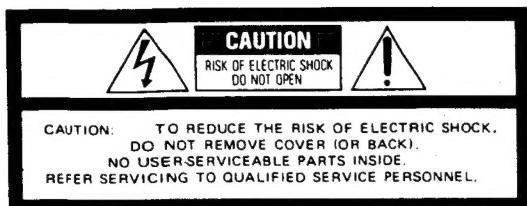
- Choisir un endroit plan, sec et ni trop chaud ni trop froid (entre -5°C et 40°C).
- Attention à avoir une bonne aération. Si vous posez des objets sur le coffret ou si vous utilisez l'amplificateur dans un endroit mal aéré ou à l'étroit, la hausse de température qui en résulte risque de provoquer des ennuis.
- Ne pas obstruer les orifices d'aération avec un tapis etc.
- Ne pas placer l'appareil à un endroit sujet à des vibrations.

2. Cordon d'alimentation

- Vérifier que l'amplificateur est bien réglé sur votre tension secteur. S'il ne l'est pas, consulter le revendeur chez qui vous vous l'êtes procuré.
- Lors du débranchement de l'appareil, tirer toujours sur la prise et non sur le cordon.

3. Mauvais fonctionnements etc.

- Il n'y a aucune pièce à régler par l'utilisateur à l'intérieur. Si vous avez un problème, débrancher le cordon d'alimentation et consulter votre revendeur.
- Ne pas insérer d'objet métallique dans l'amplificateur.
- Ne pas laisser pénétrer d'eau dans l'amplificateur.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT (U.S.A. AND CANADA/ETATS-UNIS ET CANADA)

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT

VOORZICHTIG

Ter vermindering van gevaar voor brand, elektrische schokken, enz.

- Verwijder geen schroeven, panelen of de behuizing.
- Stel dit toestel niet bloot aan regen of vocht.

PRECAUCION

Para reducir riesgos de electrochoques, incendio, etc.:

- No extraiga los tornillos, cubiertas o la caja.
- No exponga este aparato a la lluvia o humedad.

OBSERVERA

Undvik risk för elchock, brand osv genom att inte:

- Ta bort skruvar, paneler eller hölje.
- Utsätta apparaten för regn eller fukt.

Dank U voor het in dit JVC produkt gestelde vertrouwen.

Lees deze gebruiksaanwijzing vóór ingebruikname van dit toestel aandachtig door ter verkrijging van de beste prestaties.

Raadpleeg Uw JVC dealer in geval van twijfel.

Deseamos, antes que nada, agradecerle por la compra de unos de los productos de JVC.

Antes de poner esta unidad en operación, asegúrese de leer estas instrucciones para, de tal modo, obtener el mayor rendimiento posible.

Cualquier duda o pregunta, sirvase dirigirse a su concesionario JVC.

Tack för valet av denna JVC-produkt.

Läs dessa anvisningar noggrant innan apparaten börjar användas för att erhålla bästa resultat.

Fråga en återförsäljare för JVC om du skulle ha några ytterligare frågor.

BELANGRIJK

IMPORTANTE

VIKTIGT

1. Installeren

- Kies een vlakke en droge plaats, niet te koud of warm (tussen de -5°C en 40°C).
- Zorg voor goede ventilatie; geen voorwerpen op de behuizing plaatsen en het toestel niet in een te krappe plaats installeren. Slechte ventilatie kan oververhitting veroorzaken, hetgeen in schade kan resulteren.
- Voorkom dat de ventilatieopeningen wordt geblokkeerd door kleedjes ed.
- Voorkom dat het toestel blootstaat aan overmatige trillingen.

2. Netsnoer

- Kontroleren of de versterker ingesteld is overeenkomstig de landelijke netspanning. Als dit niet het geval is, kontakt opnemen met de dealer.
- Trek alleen aan de stekker en niet aan het snoer wanneer deze wordt losgemaakt van het stopkontakt.

3. Mogelijke storingen

- Binnen het toestel bevinden zich geen door de gebruiker te repareren onderdelen. Als problemen zich voordoen, de stekker uit stopkontakt halen en kontakt opnemen met de dealer.
- Geen metalen voorwerpen in het toestel steken.
- Voorkom dat het toestel met water in aanraking komt.

1. Instalación

- Elija un lugar nivelado, seco, no muy caluroso ni muy frío (entre -5° y 40°).
- Mantenga una buena ventilación; si le coloca objetos encima o lo usa en un lugar mal ventilado, la temperatura puede elevarse causándole algún desperfecto.
- No permita que una cortina, alfombra, etc. bloquee los orificios de ventilación.
- No lo use en un lugar sujeto a vibraciones.

2. Cordón de alimentación

- Controle que el amplificador esté ajustado al voltaje de su localidad. Si no fuera así, consulte con el vendedor donde adquirió la unidad.
- Al desenchufar, tire siempre del enchufe y no del cordón.

3. Desperfectos, etc.

- La unidad no posee en su interior piezas reparables por usted. Si surge algún desperfecto, desenchúfela y consulte con el concesionario.
- No le introduzca ningún objeto metálico.
- No permita que le entre agua.

1. Installering

- Välj en plats som är vågrät, torrt och som varken är för kall eller för varm (mellan -5°C och +40°C).
- Se noga upp med ventilationen: att lägga saker ovanpå apparaten eller använda den i trånga utrymmen med dålig luftcirkulation kan orsaka temperaturstegringar inuti apparaten som orsakar problem.

- Se till att ventilationshålen inte blockeras av tex en matta.
- Använd inte apparaten på platser utsatta för vibrationer och skakningar.

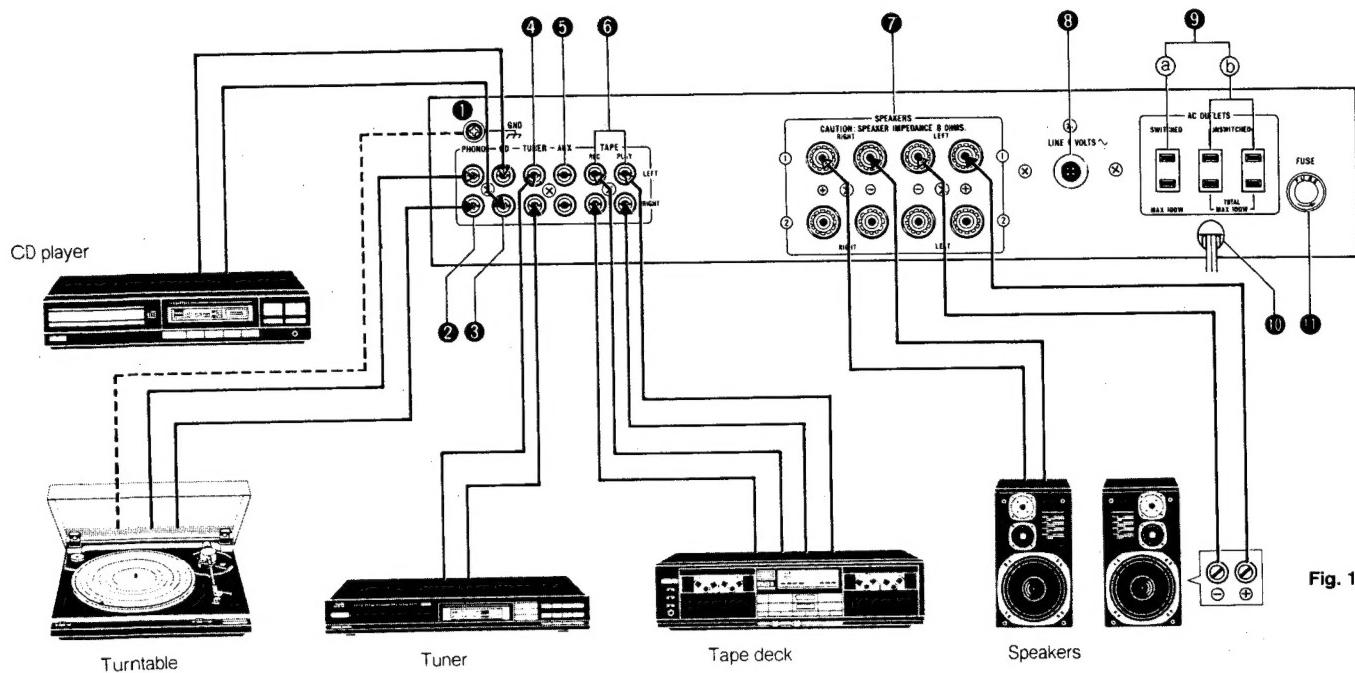
2. Nätsladd

- Kontrollera att förstärkaren är inställt för den växelspänning som råder på platsen där den ska användas (i Sverige 220V). Skulle så inte vara fallet, ta kontakt med återförsäljaren.
- Dra alltid i stickkontakten och inte i sladden vid fräckkoppling ur nätagget.

3. Effektions osv.

- Det finns inga delar inuti apparaten som konsumenten kan åtgärda, såvida du inte är utbildad tekniker. Stäng genast av strömmen om det skulle inträffa något fel genom att dra ut stickkontakten och ta kontakt med återförsäljaren.
- Inga metallföremål får komma in i apparaten.
- Se till att vatten inte tränger in i apparaten.

CONNECTION DIAGRAM



- ① GND terminal
- ② PHONO terminals
- ③ CD terminals
- ④ TUNER terminals
- ⑤ AUX terminals
- ⑥ TAPE terminals
- ⑦ SPEAKERS terminals
Connect the speaker cords following the figures.
- ⑧ AC voltage selector*
When this equipment is used in an area where the supply voltage is different from the preset voltage, reset the voltage selector to the correct position. Change the fuse to the designated capacity.
- ⑨ AC OUTLETS*
 - ⑩ SWITCHED AC outlet
 - ⑪ UNSWITCHED AC outlets
- ⑩ Power cord
- ⑪ AC line fuse holder*

* Not provided on units for the Continental Europe, U.K. and Australia.

Notes:

1. Connect source components with left and right channels connected correctly. Reversed channels may degrade the stereo effect.
2. Connect speakers with correct polarity; (+) to (+) and (-) to (-). Reversed polarity may degrade the stereo effect.
3. Switch the power off when connecting any component.
4. Connect plugs or wires firmly. Poor contact may result in hum.
5. Do not connect equipment requiring more than the rated power to the AC outlets on the rear panel.
6. The UNSWITCHED AC outlets are not switched off when the front panel power switch is switched off.
7. The SWITCHED AC outlet is switched off when the front panel power switch is switched off.
8. If your turntable has a separate ground lead, connect it to the GND terminal.
9. Use speakers with the correct impedance. This amplifier is for use with speakers with an impedance from 8 to 16 ohms.

FRONT PANEL

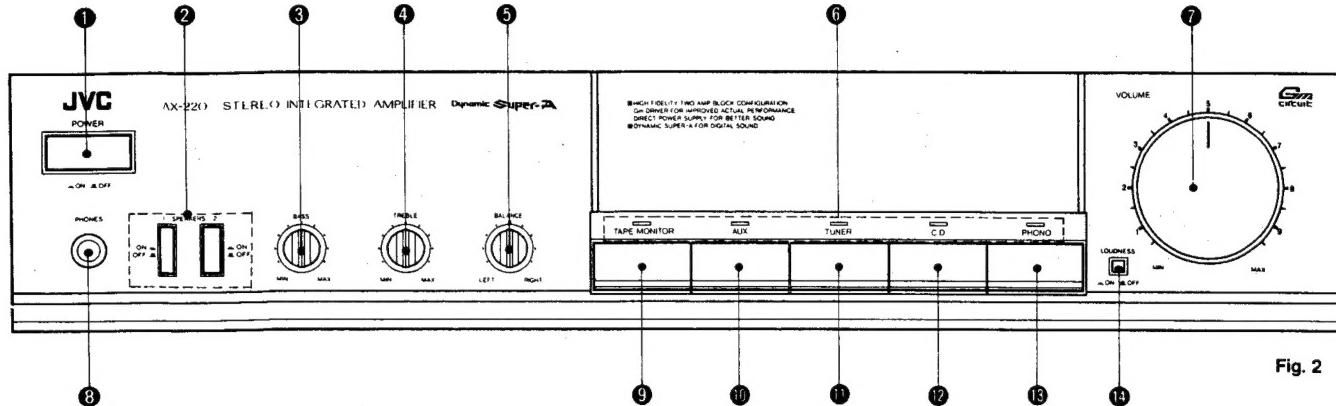


Fig. 2

① POWER

ON (■): Press this button to turn the power on.
OFF (□): Set to this position to turn the power off.

Notes:

- When power is not supplied to this amplifier for 2 – 3 days, the source select button pressed before the power was switched off may be lost when the power is switched on again. If this happens, set the buttons, etc. again.
- An electronic source selector is used in this unit. When the POWER button is first switched on, two or more sources or no source may be selected. Make sure to input the source select data by pressing one of the source selectors.
- If the POWER button is pressed repeatedly to switch on and off too quickly, the same phenomenon as the above will occur.

② SPEAKERS

- Press in (■) to listen to the speakers connected to the SPEAKERS SYSTEM-1 terminals.
 - Press in (■) to listen to the speakers connected to the SPEAKERS SYSTEM-2 terminals.
 - Press 1 and 2 switches in (■) to listen to both speaker systems simultaneously.
- OFF:** Press 1 or 2 switch to set out (□) to turn off the corresponding speaker (for listening only through headphones, etc.).

Note:

- When speakers are connected to only one system of the SPEAKERS terminals, press only the SPEAKERS switch of the system connected; if both switches are pressed, sound will not be heard from either speaker system. When two pairs of speakers are connected and either or both SPEAKERS switches is/are pressed, sound will be heard from either or both speaker system (s).

③ BASS

Turn clockwise to boost bass response and counterclockwise to decrease it.

④ TREBLE

Turn clockwise to boost treble response and counterclockwise to decrease it.

⑤ BALANCE

Use to adjust the balance between the left and right speakers.

Normally set this knob to the center click position.

⑥ SOURCE INDICATOR

By pressing the buttons ⑨ - ⑬ respective LEDs light up. They also light up when the tape monitor button is pressed. In this case, the tape monitor button will have the priority.

⑦ VOLUME

Turn clockwise for louder sound.

⑧ Headphone jack (PHONES)

Plug stereo headphones into this jack for private listening.

⑨ TAPE MONITOR

Press in to listen to a tape played on a tape deck connected to the TAPE terminals. If your tape deck is a three-head deck, you can monitor the sound that has just been recorded on the tape. To release this function, press it again.

⑩ AUX

Press to listen to the source connected to the AUX terminals.

⑪ TUNER

Press in to listen to broadcasts.

⑫ CD

Press in to listen to a source connected to the CD terminals.

⑬ PHONO

Press in to listen to records.

⑭ LOUDNESS

Press this switch ON (■) to compensate for the ear's different sensitivity to sound at low volumes.

OPERATION

Listening to broadcasts

1. Connect a tuner to the TUNER terminals on the rear panel.
2. Press the POWER button to on (■).
3. Select the speaker system with the SPEAKERS switches.
4. Press the TUNER button to on.
5. Operate the tuner according to its instruction manual.
6. Adjust the VOLUME, LOUDNESS, BALANCE, BASS and TREBLE controls as required.

Listening to records

1. Connect a turntable to the PHONO terminals on the rear panel.
Be careful to connect the channels correctly.
2. Press the POWER button to on (■).
3. Select the speaker system with the SPEAKERS switches.
4. Press the PHONO button to on.
5. Operate the turntable according to its instruction manual.
6. Adjust the VOLUME, LOUDNESS, BALANCE, BASS and TREBLE controls as required.

Note:

- Use a turntable with a moving magnet cartridge.

Listening to tapes

1. Connect a tape deck to the TAPE PLAY terminals.
2. Press the POWER button to on (■).
3. Select the speaker system with the SPEAKERS switches.
4. Press the TAPE MONITOR button to on.
5. Operate the tape deck for playback according to its instruction manual.
6. Adjust the VOLUME, LOUDNESS, BALANCE, BASS and TREBLE controls as required.

Note:

- Don't place the tape deck directly on or under the amplifier. Otherwise, such trouble as heating or hum would result.

Using stereo headphones

Stereo headphones can be plugged into the front panel jack.

Recording tapes

Recording from records

1. Connect a tape deck to the TAPE REC terminals.
2. Press the POWER button to on (■).
3. Select the speaker system with the SPEAKERS switches if you want to monitor the sound while recording.
4. Press the PHONO button to on.
5. Operate the turntable.
6. Operate the tape deck for recording.

Note:

- You can also monitor the sound being recorded with headphones.

To record from other sources (TUNER, CD, AUX)

Press the TUNER, CD or AUX button to record radio broadcasts, or the source connected to the CD, AUX terminals.

All other operations are identical to when recording from disc source.

TROUBLESHOOTING

What appears to be a malfunction may not always be serious.

Make sure first....

No sound and no illumination

Is the AC plug connected properly?

Note:

If one of the source buttons is not completely pressed in, no sound will be heard from the speakers. Press the required button in again.

No sound from speakers

Are the speaker cords connected?

Is the VOLUME control set to minimum?

Are the SPEAKERS switches set correctly?

Sound from one speaker only

Are the speaker cords connected correctly?

Is the BALANCE control set to one extreme or the other?

Loud hum during record playing

Is the turntable grounded?

Try to change cord path.

Howling during record playing

Is the turntable too close to the speakers?

SPECIFICATIONS

OVERALL CHARACTERISTICS

Output power : 40 watts per channel into 8 ohms at 1 kHz (DIN).

35 watts per channel, min. RMS, both channels driven, into 8 ohms from 40 Hz to 20 kHz, with no more than 0.007% total harmonic distortion.

35 watts per channel, min. RMS, both channels driven, into 8 ohms at 1 kHz with no more than 0.003% total harmonic distortion. (measured by JVC Audio Analyzer System)

Total harmonic distortion : 0.007% (40 Hz — 20 kHz, 8 ohms) at 35 watts

Intermodulation distortion : 0.007% (60 Hz : 7 kHz = 4 : 1, 8 ohms) at 35 watts

Power band width : 7 Hz — 50 kHz (IHF, 0.05 %, 8 ohms both channels driven)

Frequency response : 5 Hz — 80 kHz +0, -3 dB (8 ohms)

Damping factor : 35 (1 kHz, 8 ohms)

Input terminals
Input sensitivity/
impedance (1 kHz)
PHONO : 2.5 mV/47 kohms
CD/AUX/TUNER/
TAPE

Signal-to-noise ratio
PHONO : 71 dB ('66 IHF)
CD/AUX/TUNER/
TAPE MONITOR

PHONO : 100 dB ('66 IHF)
(REC OUT)
CD/AUX/TUNER/
TAPE MONITOR
(SP OUT)

PHONO : 80 dB ('78 IHF)
CD/AUX/TUNER/
TAPE MONITOR
(SP OUT)

PHONO : 76 dB ('78 IHF)

PHONO : 67 dB (DIN)

CD/AUX/TUNER/
TAPE MONITOR : 68 dB (DIN)

Tone controls

: TREBLE: +8 ±1 dB
-8 ±1 dB
(at 10 kHz)

BASS: +8 ±1 dB
-8 ±1 dB
(at 100 Hz)

: +6 dB (at 100 Hz)
+4 dB (at 10 kHz)

Loudness controls
(Volume control at
-30 dB position)

EQUALIZER

PHONO overload
capacity

PHONO : 100 mV (0.02 % THD)

PHONO RIAA
deviation
PHONO : ±0.5 dB (20 Hz —
20 kHz)

Recording output
Output level/
impedance

TAPE REC : 150 mV/900 ohms

GENERAL

Dimensions : 435(W) x 92(H) x
252(D) mm
(17-3/16" x 3-5/8" x
7-15/16")

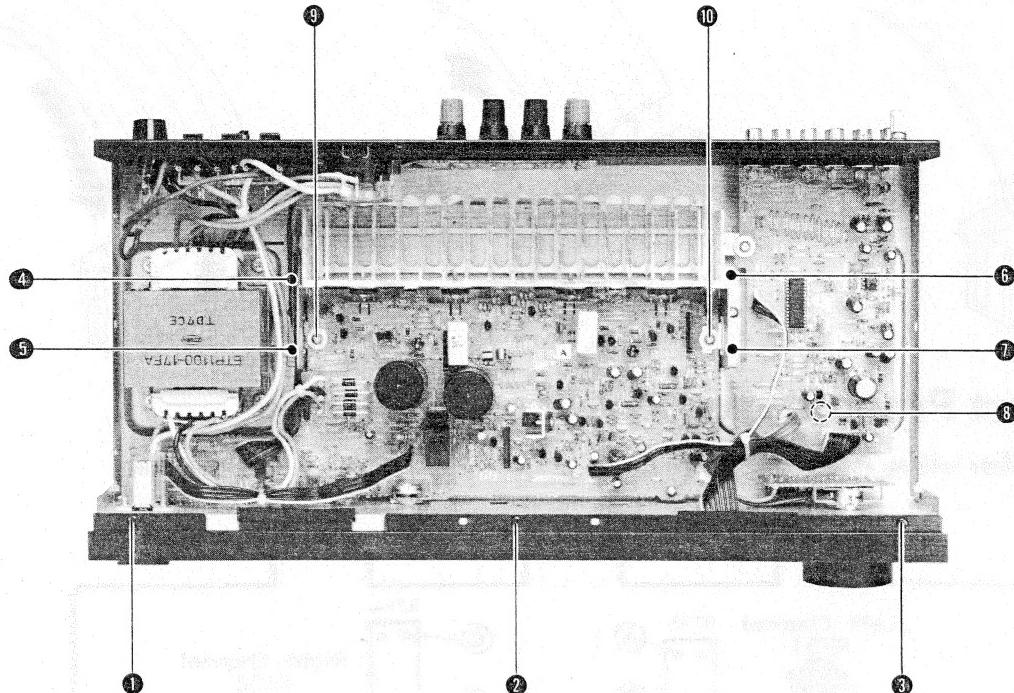
Weight : 4.4 kg (9.7 lbs.)

Design and specifications subject to change without
notice.

POWER SPECIFICATIONS

Areas	Line Voltage & Frequency	Power Consumption
U.K.	AC 240V~50 Hz	195 watts
Australia		
Continental Europe	AC 220V~50 Hz	
Saudi Arabia	AC 127/220 V~selectable, 50/60 Hz	100 watts
Other Areas	AC 110/120/220/240 V~selectable, 50/60 Hz	

Removal Procedures



■ Removing the Metal Cover

1. Remove six screws.
2. Remove the metal cover by lifting up its rear section and pulling it backward while holding it on incline.

■ Removing the Front Panel

1. Remove the metal cover.
2. Remove plastic rivets ① – ③ and three screws from the lower part of the front panel.

■ Removing the Power Transistors

1. Remove the metal cover.
2. Remove four screws securing the front bracket of the bottom side and four screws securing the rear panel.
3. Remove screws ④ – ⑦ to remove the PC board from fastener ⑧.
4. Keep the PC board a little away from the front panel and rear panel while pushing them toward you and the back side respectively and raise the PC board to the left (Power Transformer side.)

Under this condition, check the Source Select PC Board and Power Amplifier PC Board.

5. Remove solder from the power transistor (Q761-Q764).
6. Remove screws ⑨ and ⑩ and remove the heatsink.
7. Remove the defective power transistor from the heatsink and replace it.

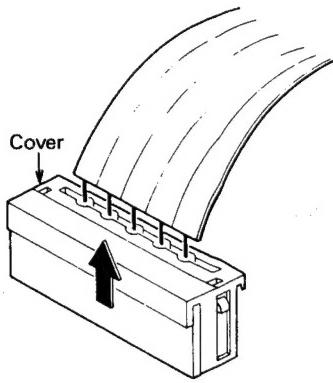
■ Precautions when Installing the Volume Knob

When installing the main volume (R211), the volume knob should be pulled out. For installation, perform the next procedures.

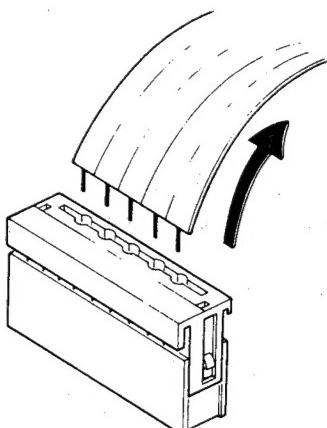
1. After installing R211 to the front bracket, turn the volume shaft fully counterclockwise.
2. Insert the volume knob so that the projection part of its circumference faces right above.

■ Use of New-type Connector

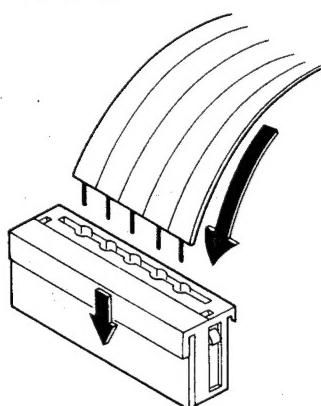
(1) Slide the cover upward.



(2) Extract the wires.

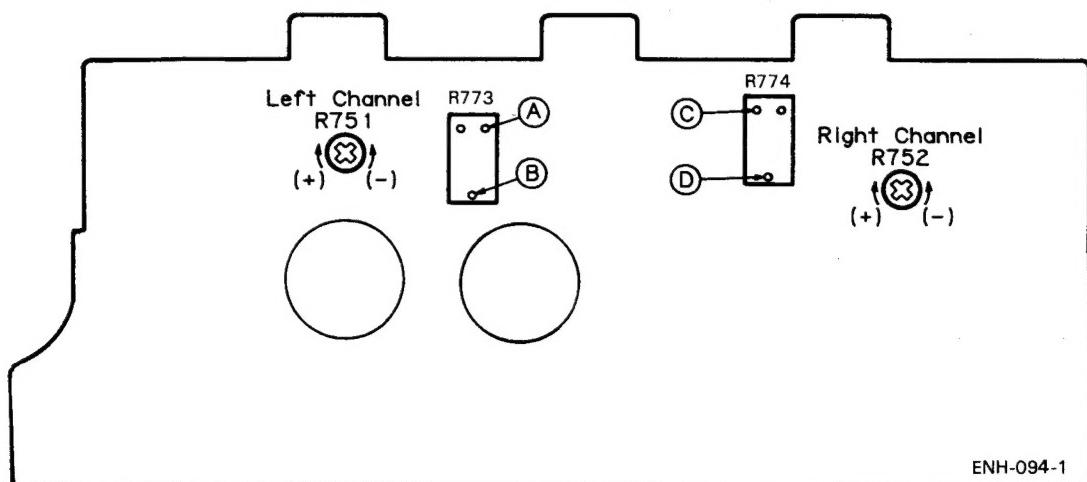


(3) Insert the wires after pushing in the cover.



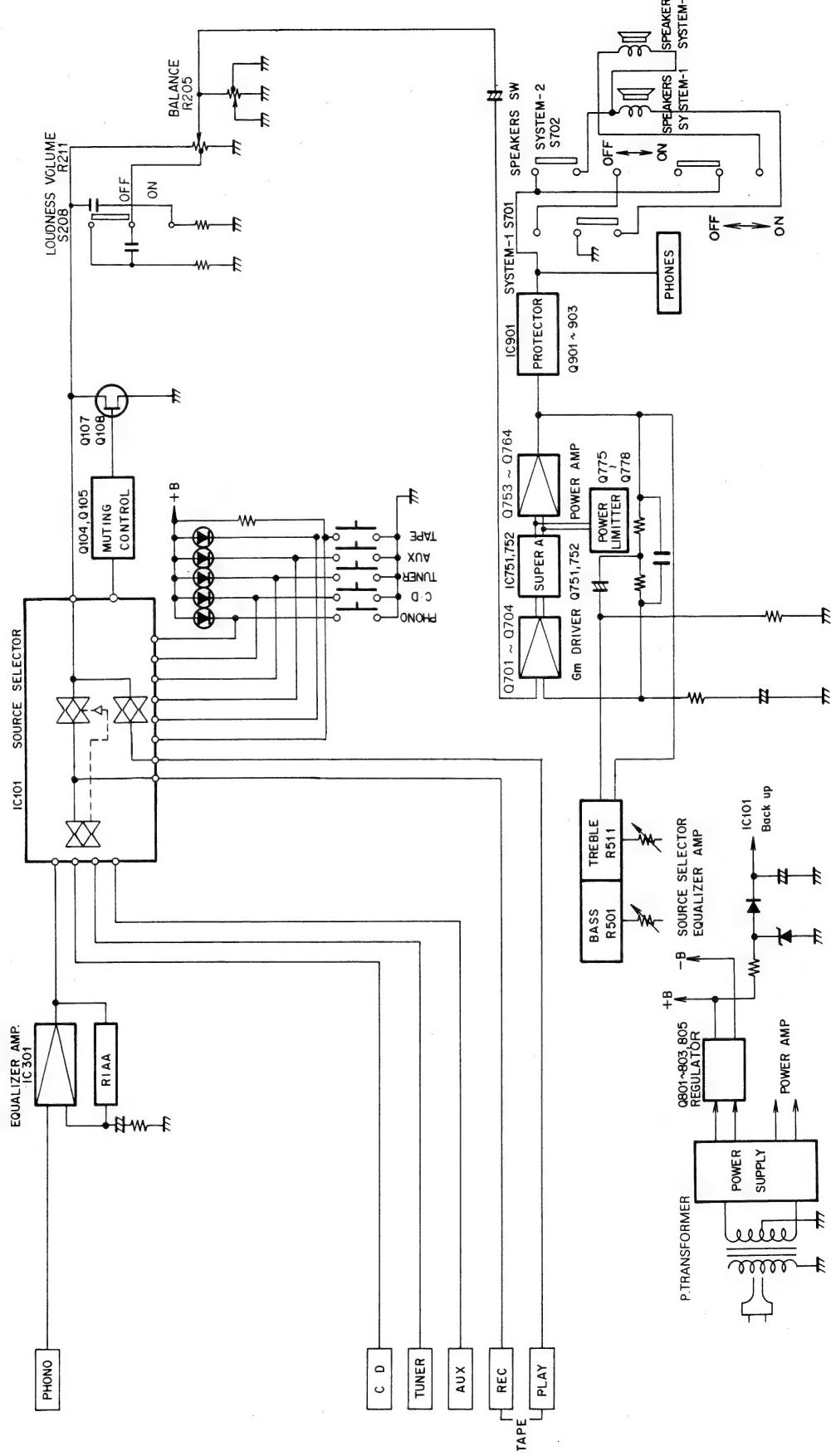
Adjustment Procedures

■ Power Amplifier Idling Adjustment



1. Before tuning on the power, turn the semi-fixed resistors (R751 for L channel and R752 for R channel) of the power amplifier circuit board fully counterclockwise.
2. Adjust the semi-fixed resistor (R751 and R752) so that the voltage at the following test points of the power amplifier circuit board is within a range of 3 ~ 5 mV after the power is turned on.
L channel: Measure the voltage between test point A (emitter of Q761) and output at the test point B.
R channel: Meaure the voltage between test point C (emitter of Q762) and output at the test point D.
3. Readjust resistors R751 and R752 about 10 minutes after the power is turned on (the heatsink temperature must be sufficiently high) so that the voltage at the test points becomes 11 mV.
Confirm that the voltage does not vary when the heat-sink temperature increases further.
Note: Be sure to perform the measurement with the probes and cabinet of the measuring equipment separated from the grounding terminals of AX-220BK or other measuring equipment.

Block Diagram

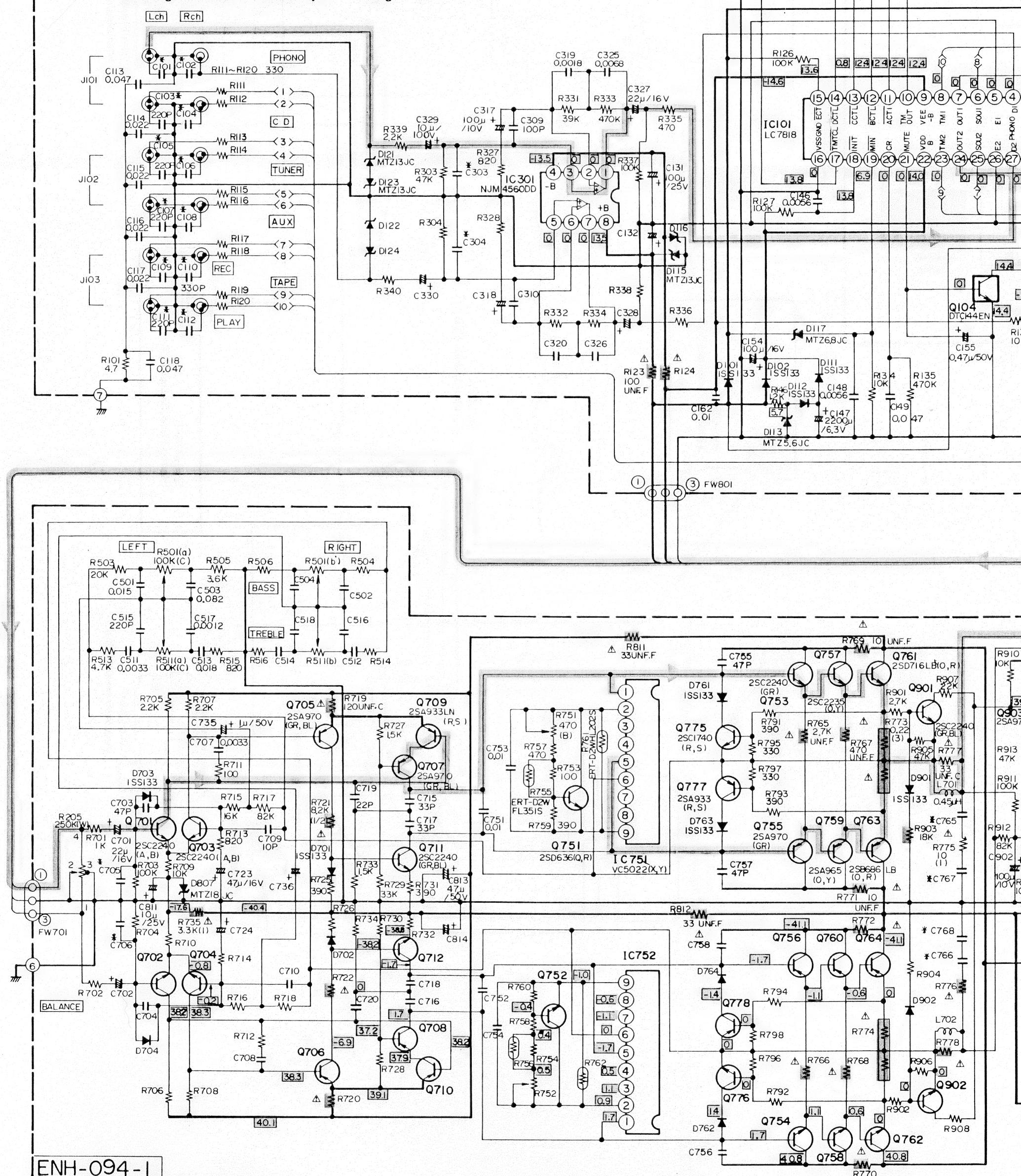


Schematic Diagram

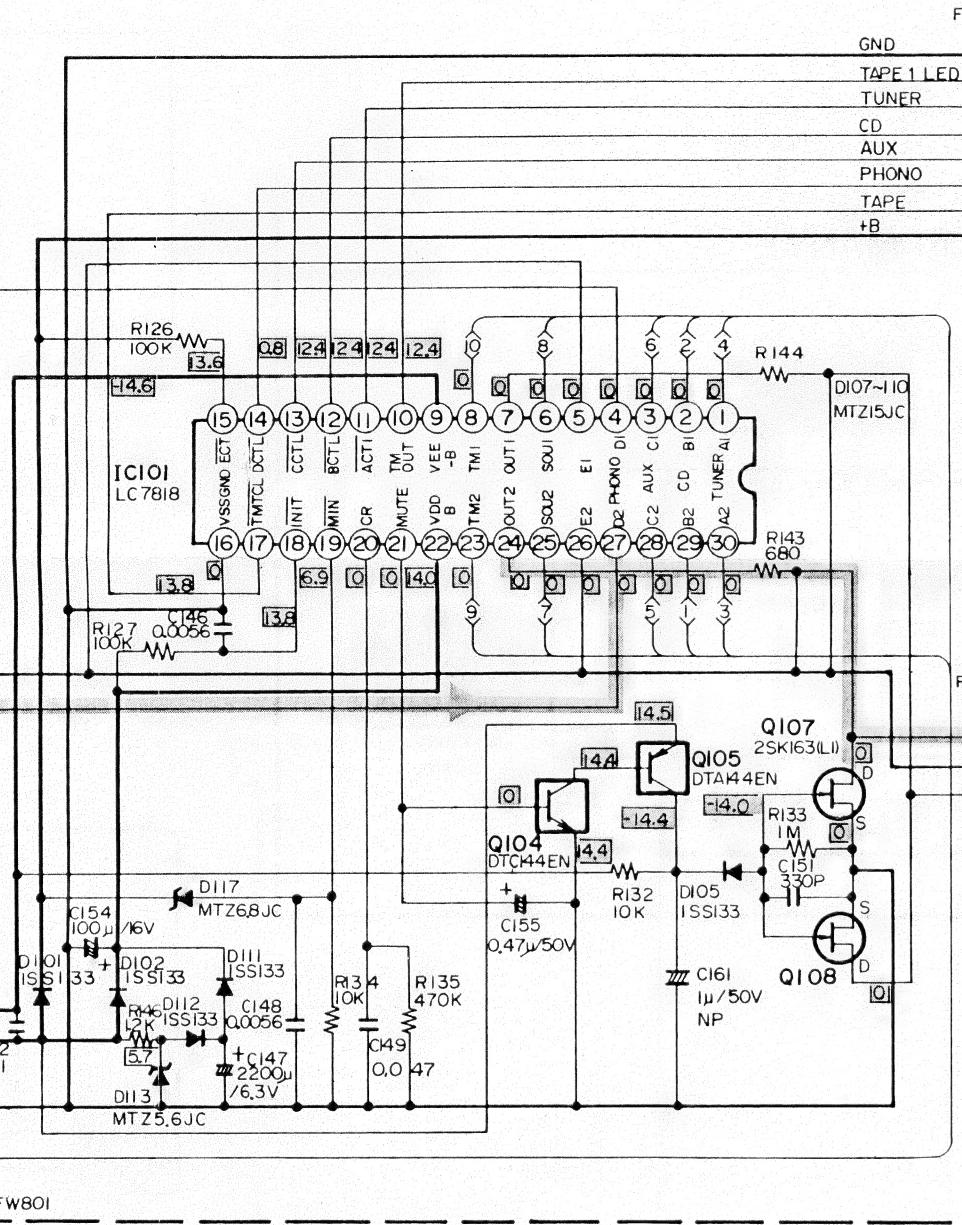
Notes:

- shows DC voltage to the chassis with no signal input.
- indicates \pm B power supply.
- indicates signal path.
- When replacing the parts in the darkened area (—) and those marked with Δ , be sure to use the designated parts to ensure safety.
- This is the standard circuit diagram.

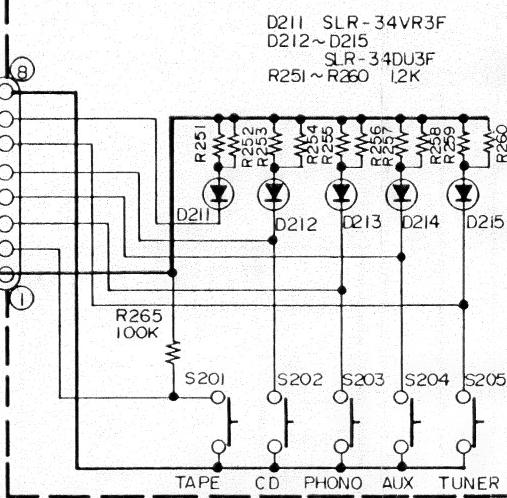
The design and contents are subject to change without notice.



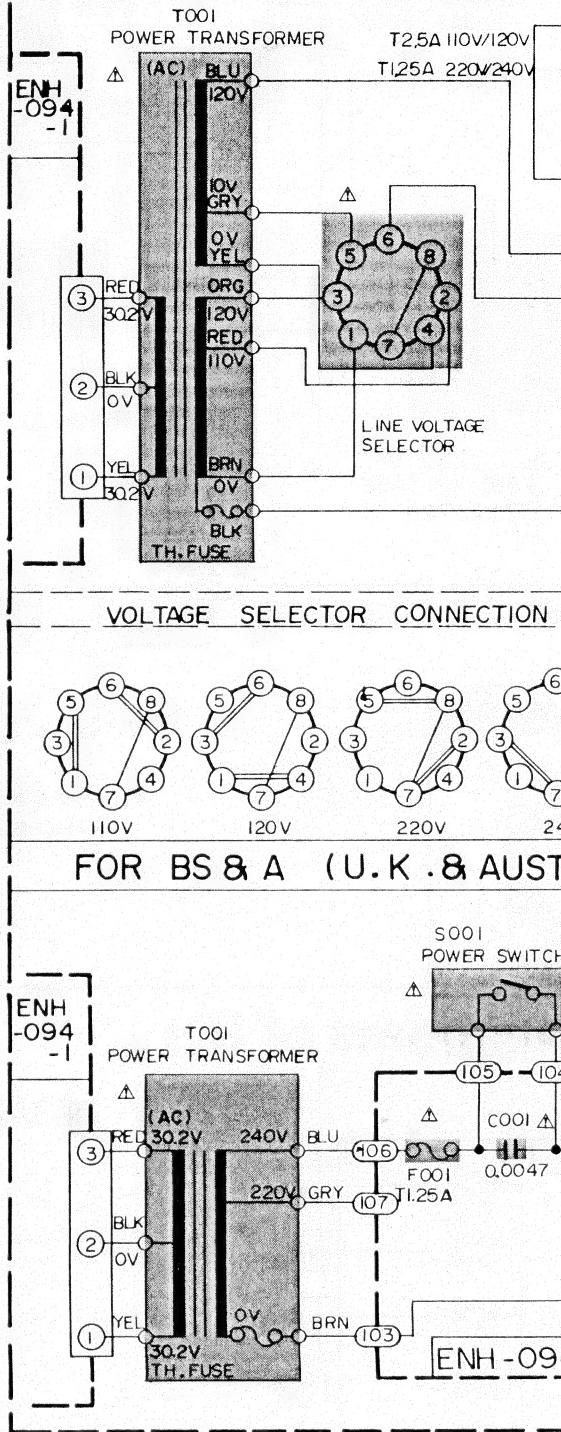
ENH-094-2



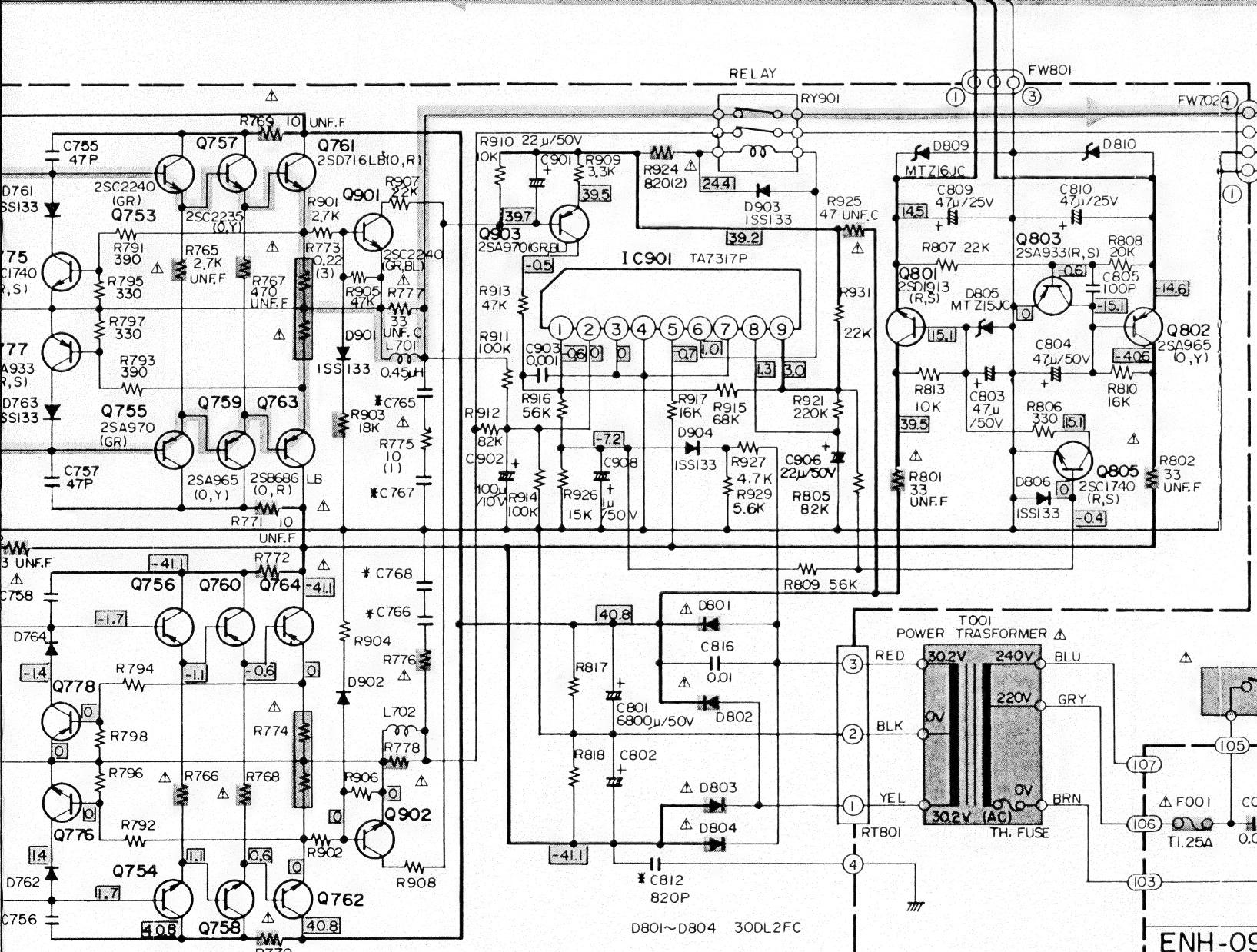
ENH-094-5



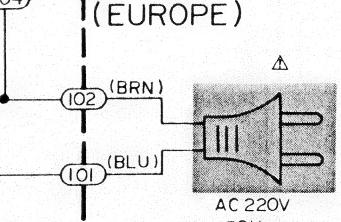
FOR U, P & PG (OTHER C)



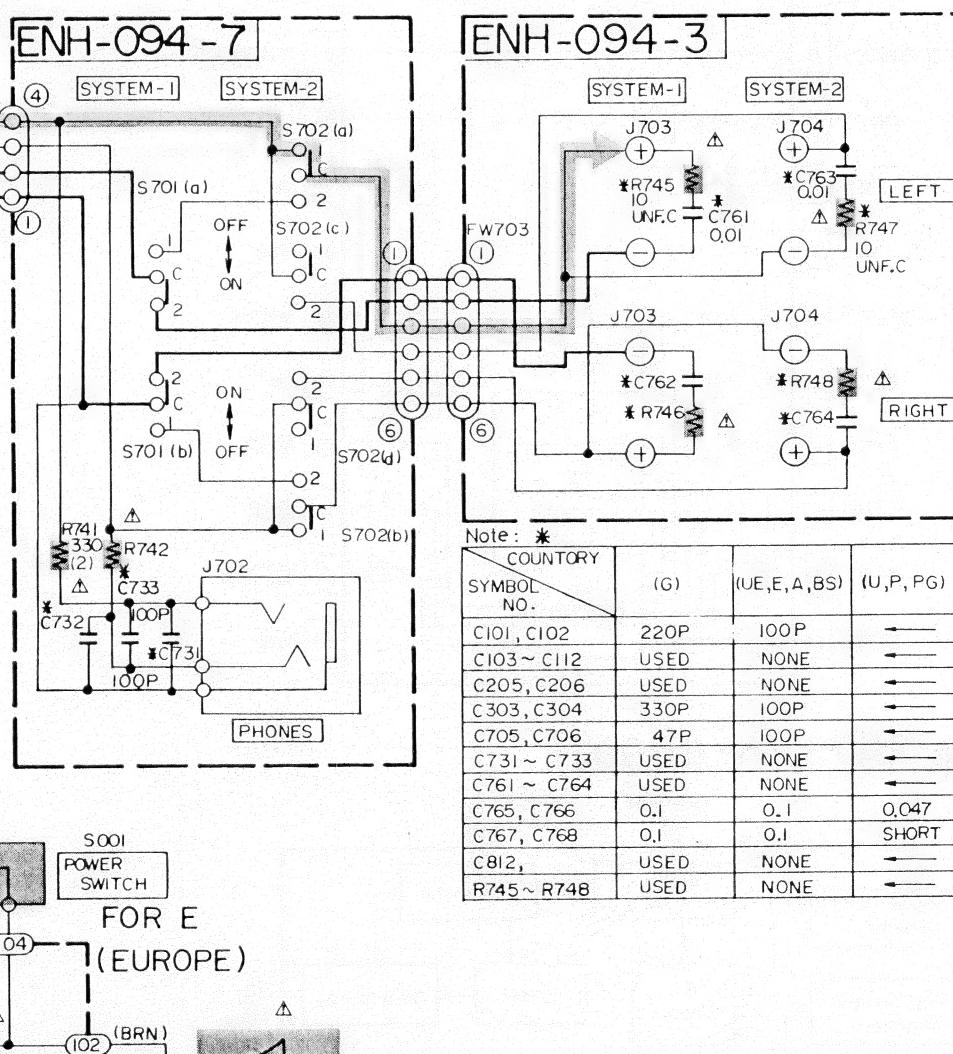
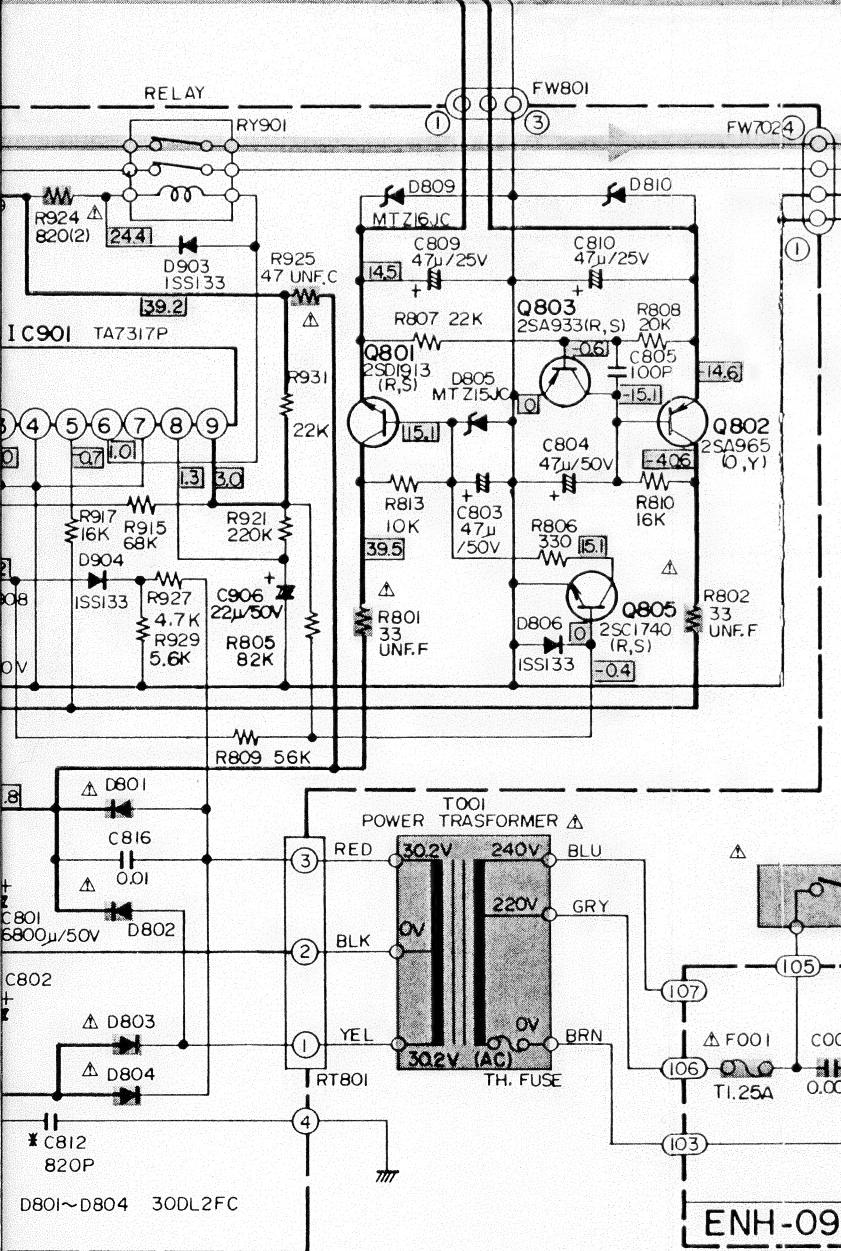
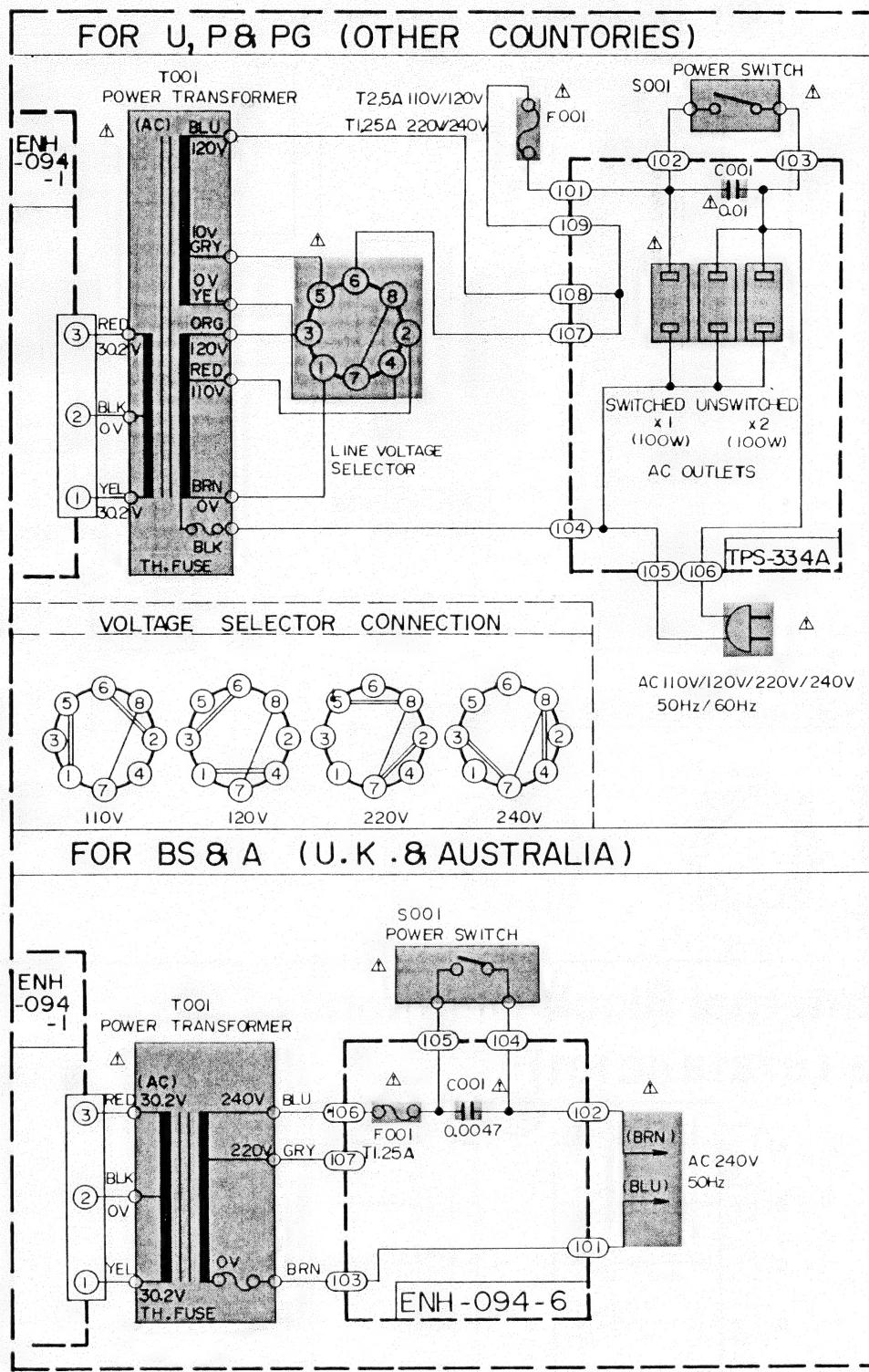
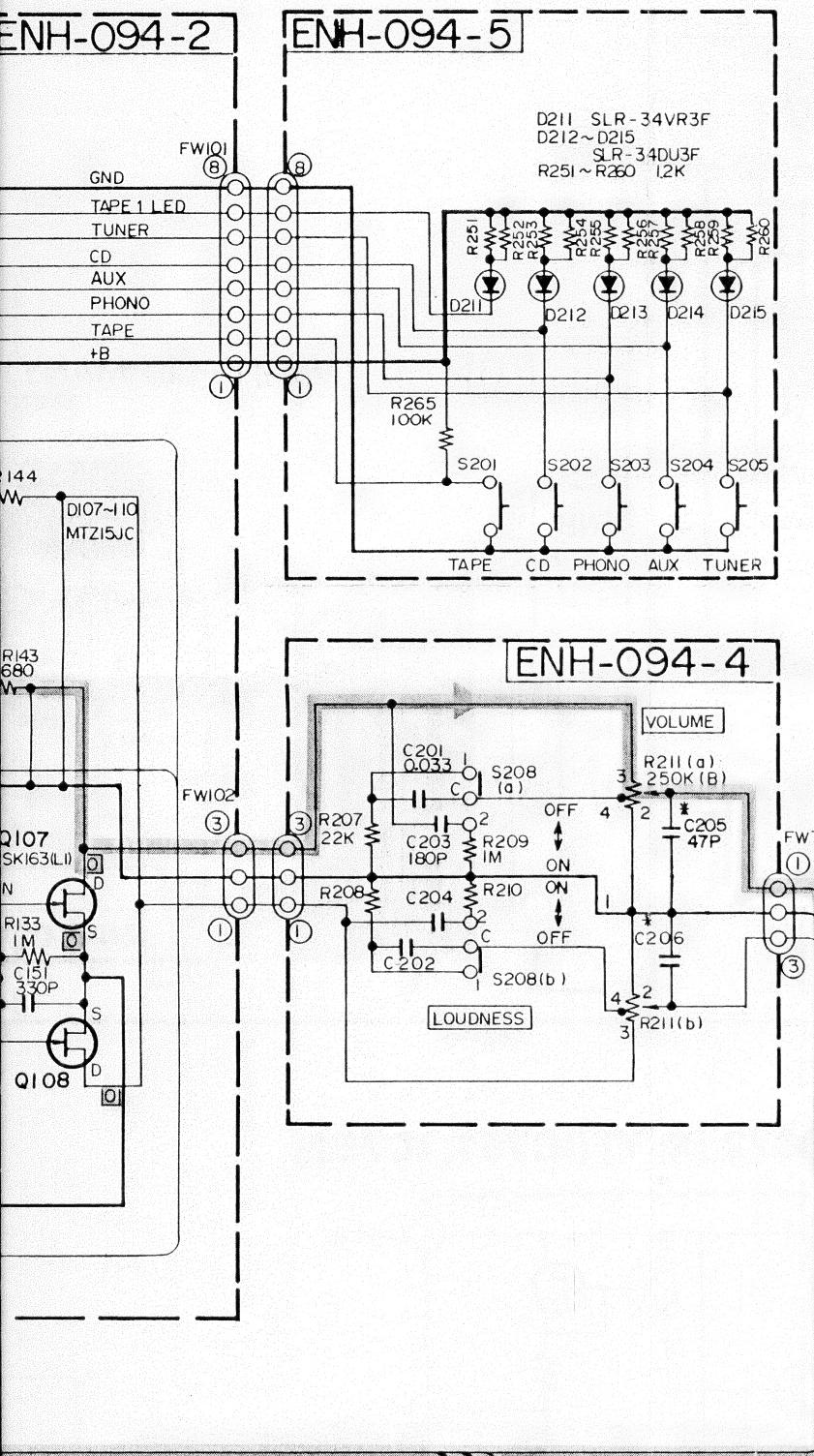
ENH-094-7



ENH-094-6

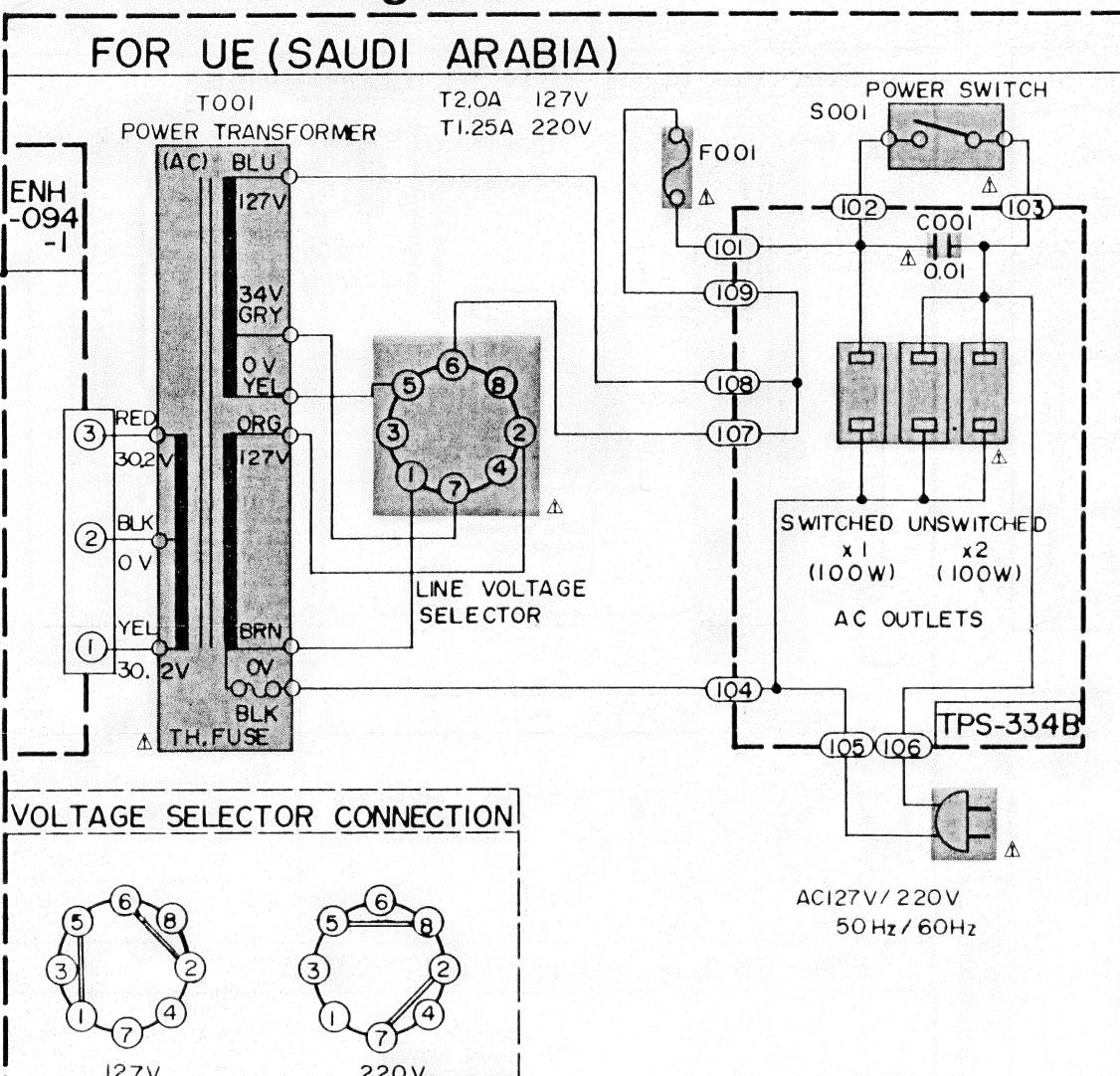
FOR E
(EUROPE)

Note: *
SYMBOL NO.
C101, C102
C103 ~ C11
C205, C206
C303, C304
C705, C706
C731 ~ C7
C761 ~ C7
C765, C766
C767, C768
C812, C813
R745 ~ R748

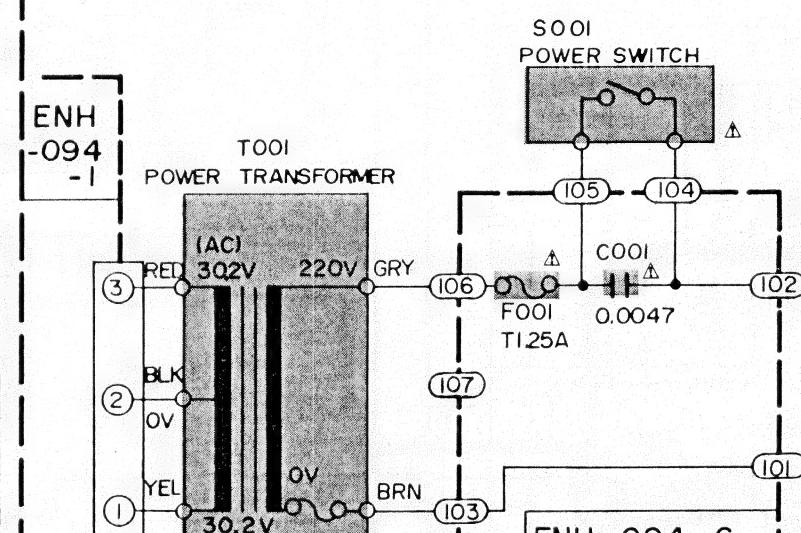


COUNTRY	(G)	(IUE,E,A,BS)	(U,P,PG)
C101, C102	220P	100P	→
C103 ~ C112	USED	NONE	→
C205, C206	USED	NONE	→
C303, C304	330P	100P	→
C705, C706	47P	100P	→
C731 ~ C733	USED	NONE	→
C761 ~ C764	USED	NONE	→
C765, C766	0.1	0.1	0.047
C767, C768	0.1	0.1	SHORT
C812,	USED	NONE	→
R745 ~ R748	USED	NONE	→

Schematic Diagram

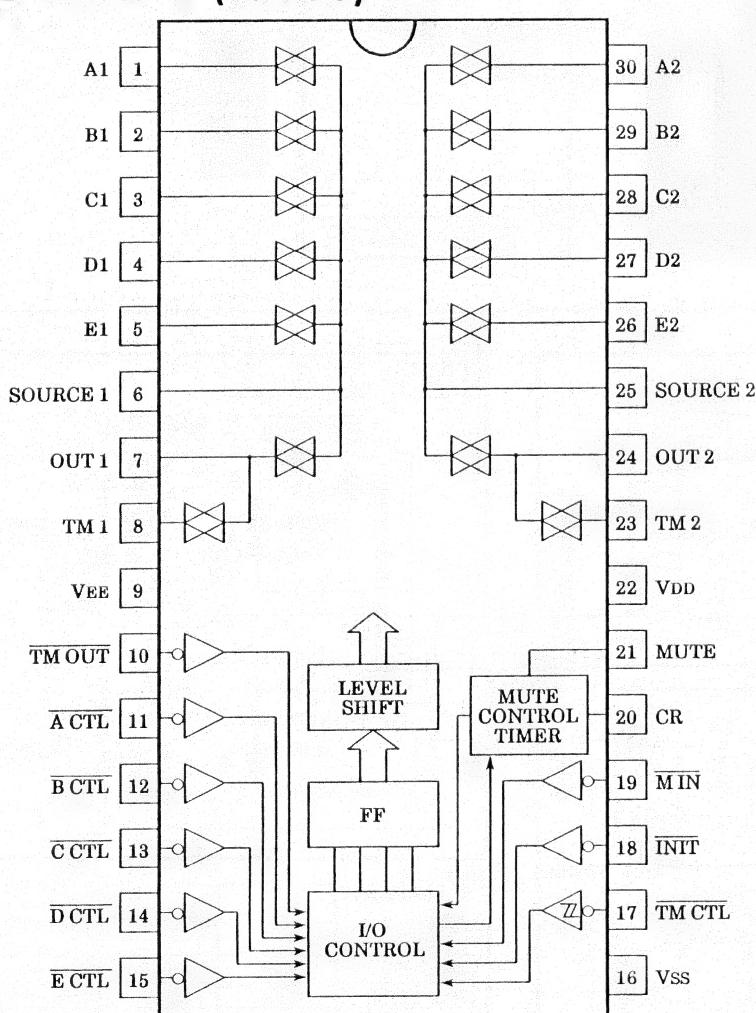


FOR G (WEST GERMANY)

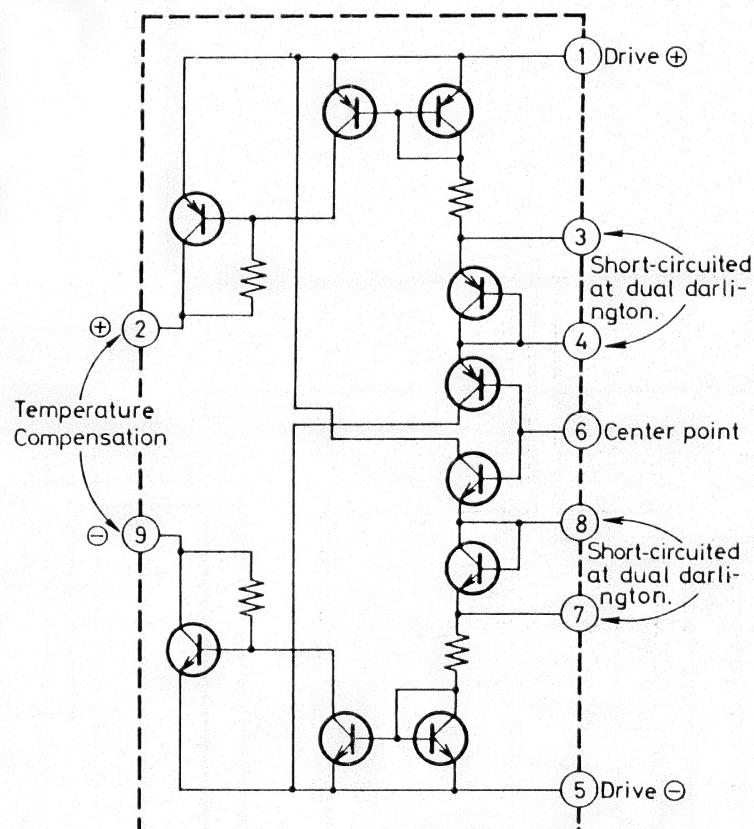


Internal Block Diagrams of ICs

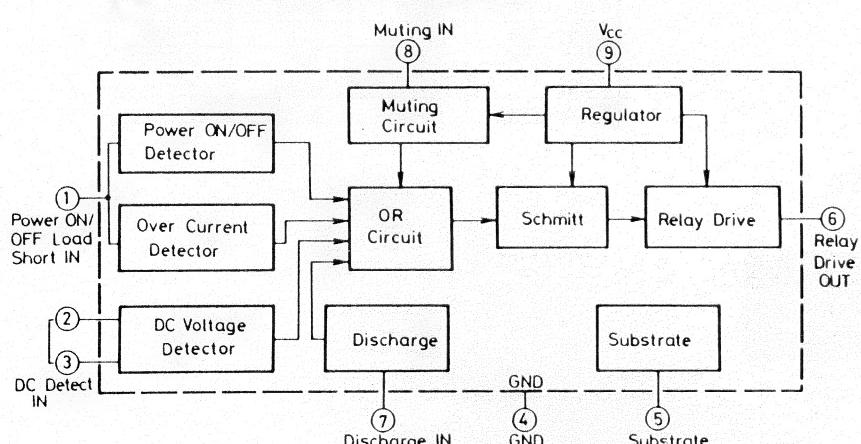
■ LC7818 (IC101)



■ VC5022 [X, Y] (IC751, IC752)

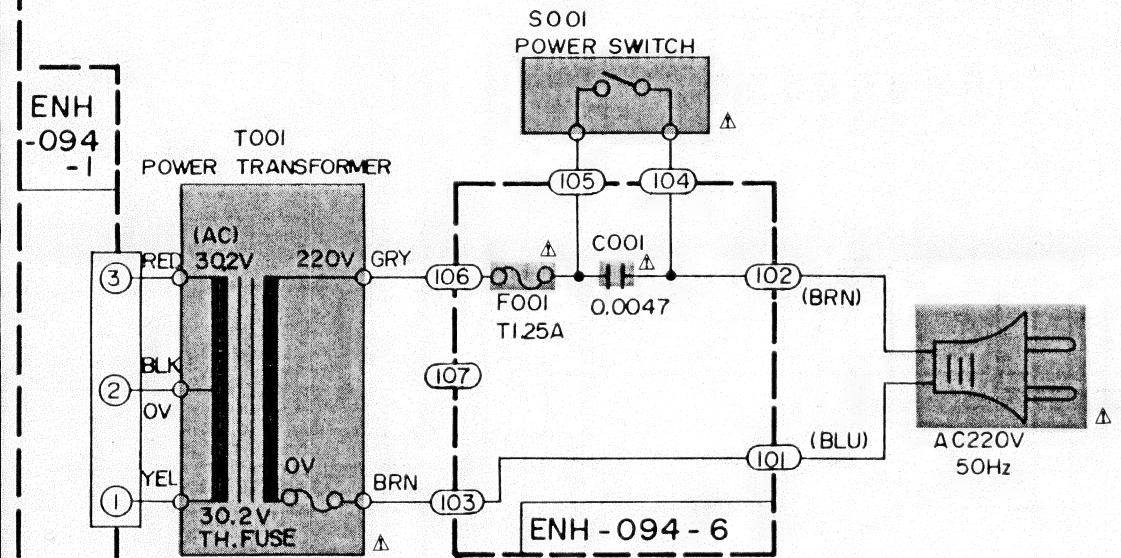


■ TA7317P (IC901)

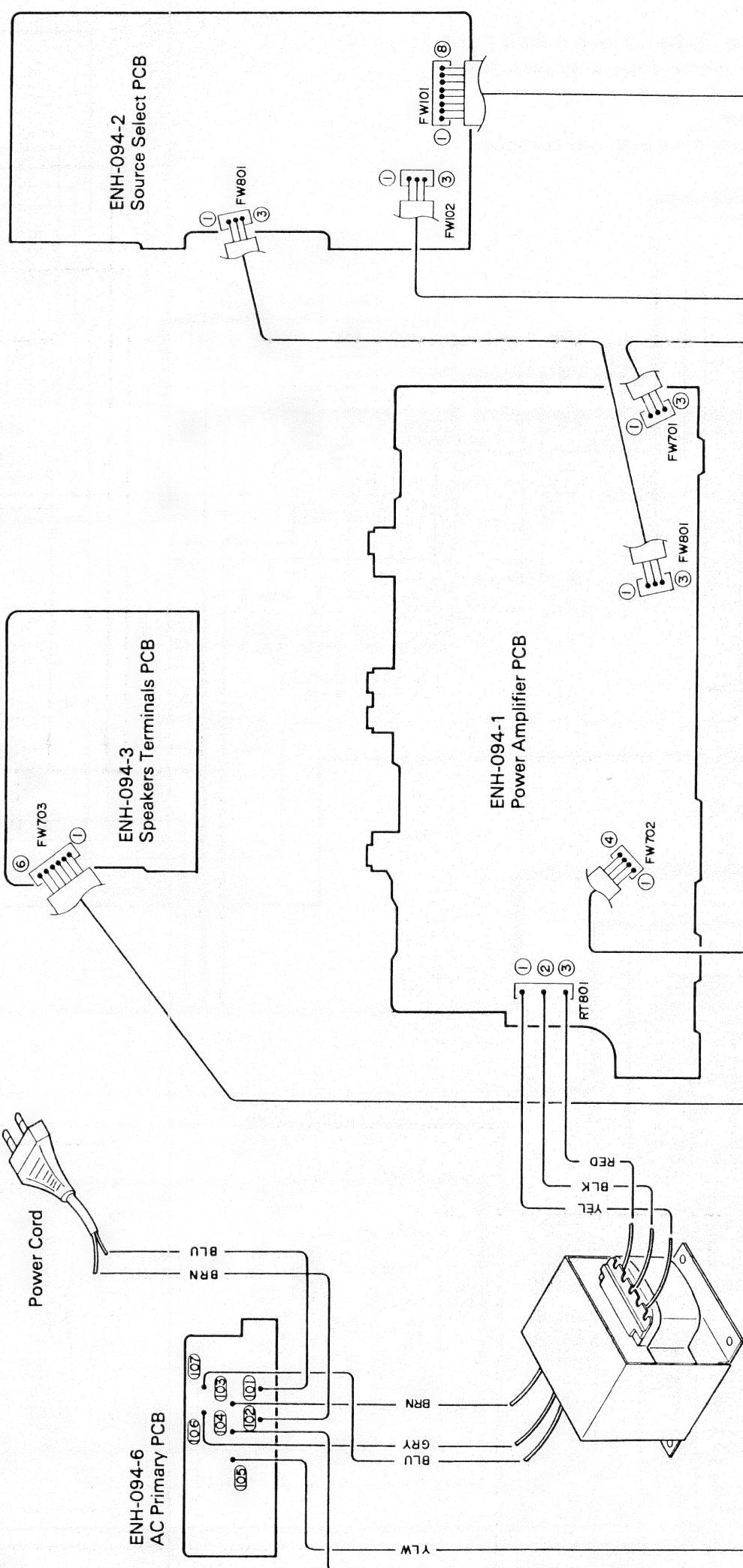
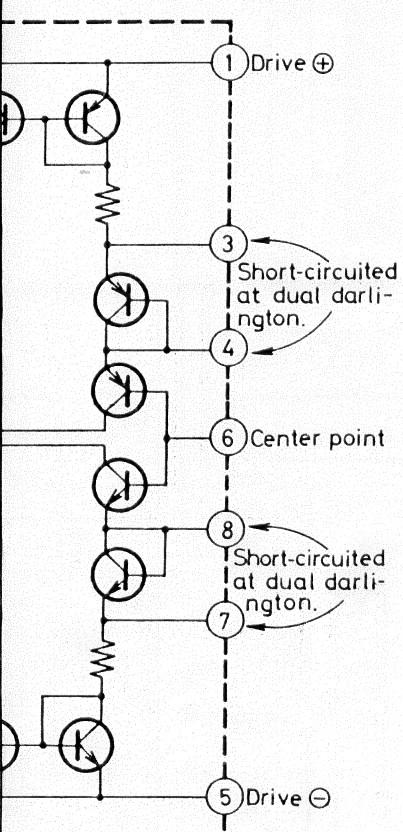


Connection Diagram

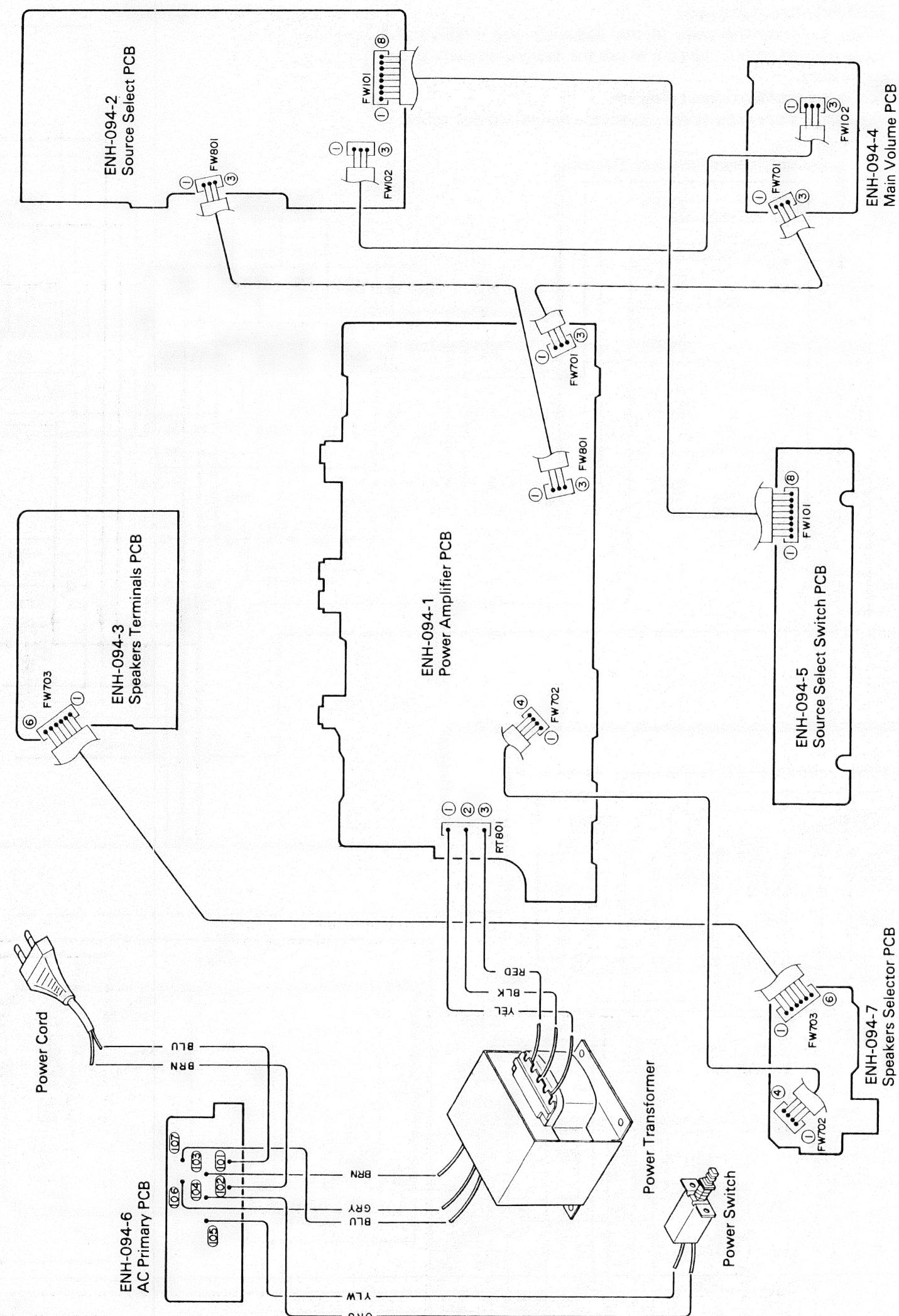
FOR G (WEST GERMANY)



Y] (IC751, IC752)



Connection Diagram



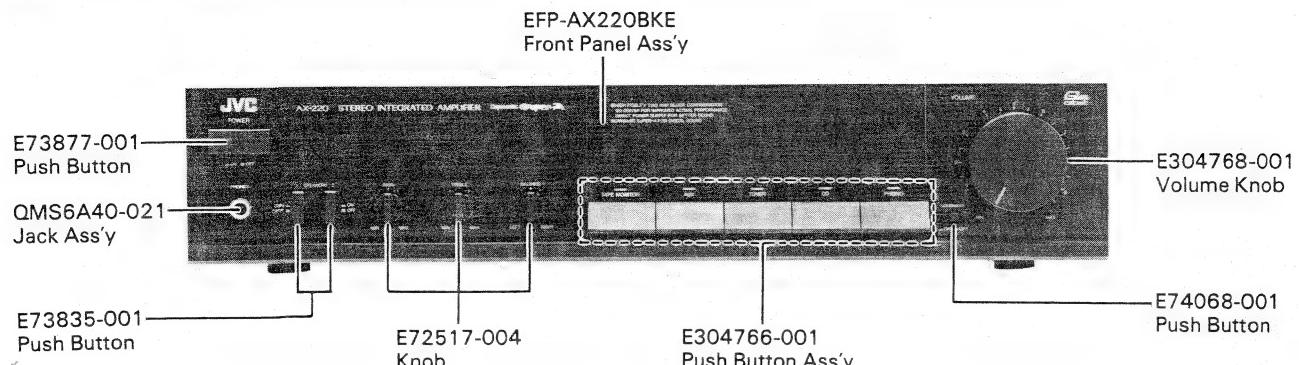
PARTS LIST

Contents

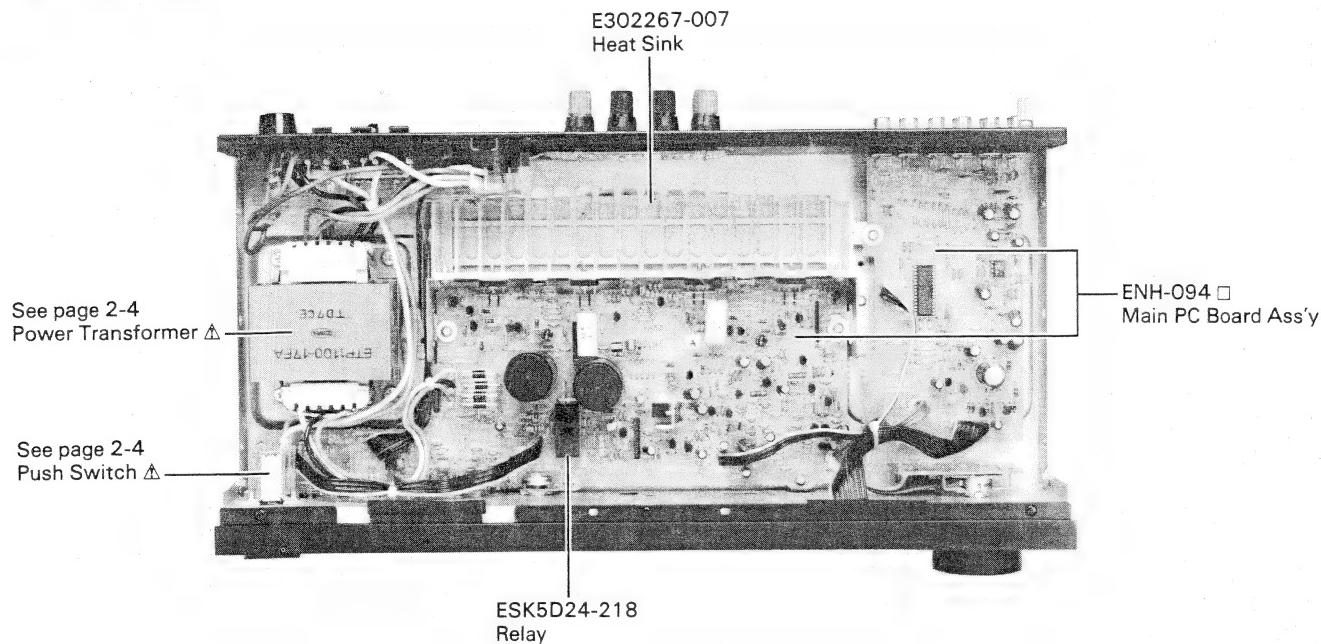
	Page
Main Parts Locations.....	2-2
■ Front View.....	2-2
■ Top View	2-2
■ Rear View	2-2
Exploded View and Part Numbers.....	2-3
Printed Circuit Board Ass'y and Parts List.....	2-5
■ ENH-094□ Main PC Board Ass'y	2-5
■ TPS-334□ AC Outlet PC Board Ass'y	2-9
Accessories List	2-9
Packing Materials and Part Numbers	2-10

Main Parts Locations

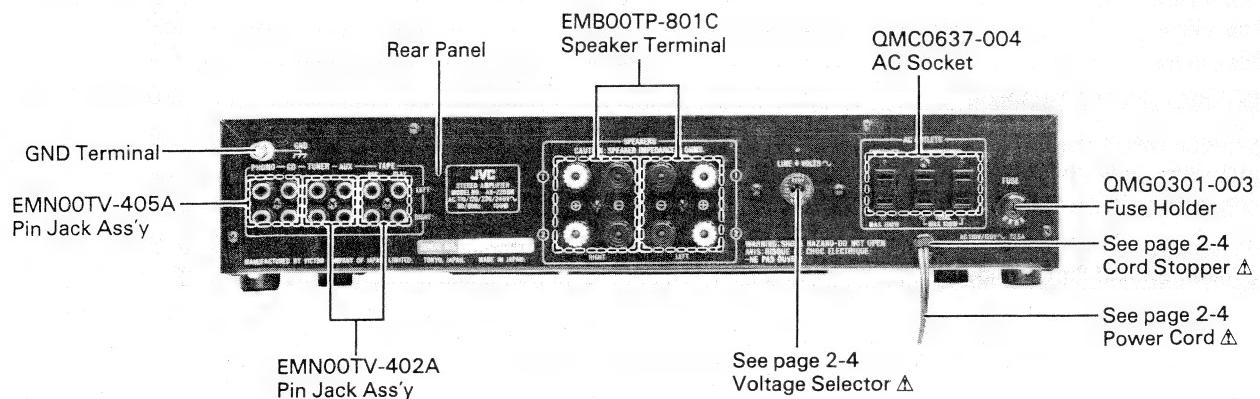
Front View



Top View

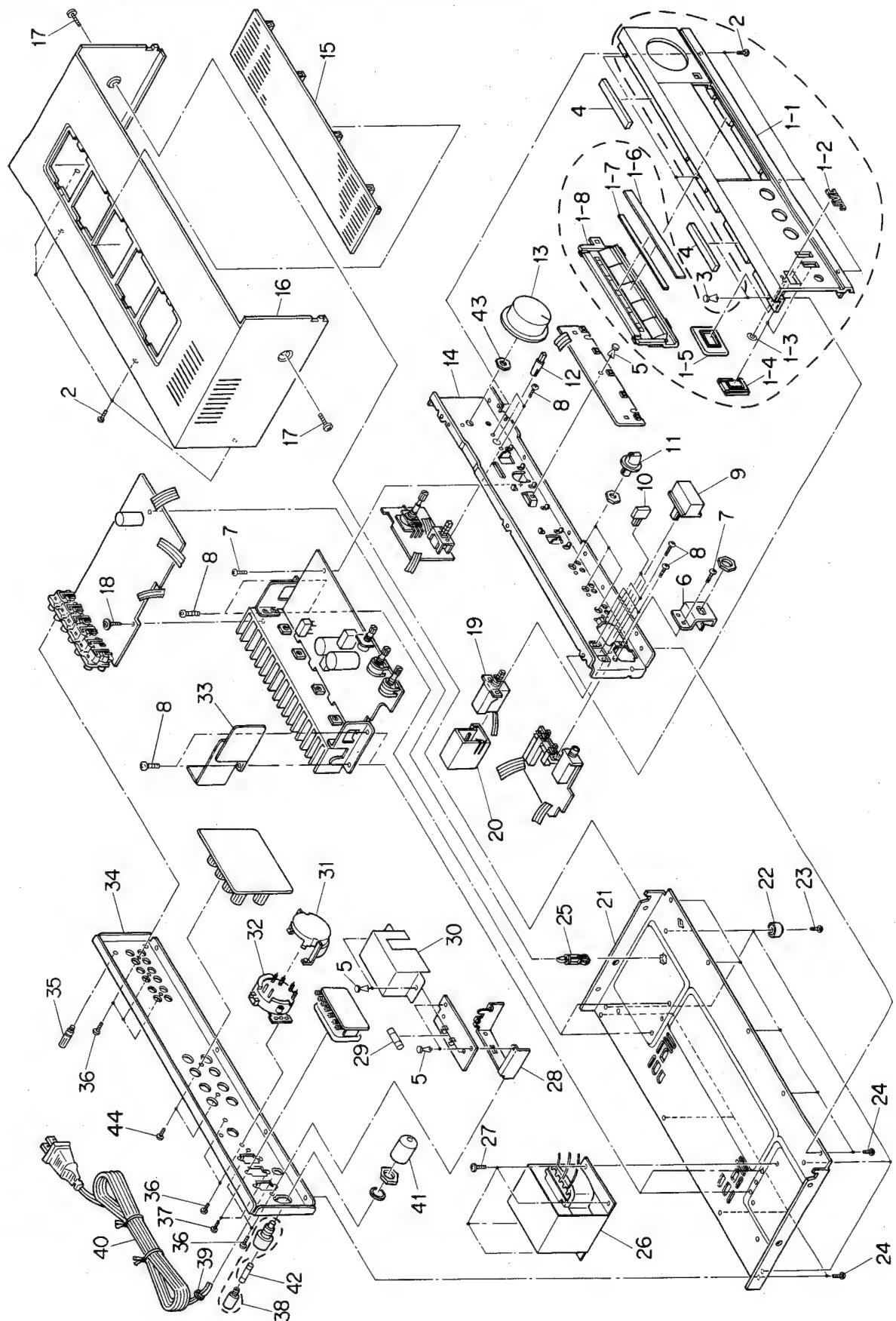


Rear View



△ : Safety Parts

Exploded View and Part Numbers



▲	Item	Parts Number	Parts Name	Q'ty	Description	Areas
	1 1-1 1-2 1-3 1-4	EFP-AX220BKE E25657-001 E72968-001 E60912-003 E73836-001	Front Panel Ass'y Front Panel JVC Mark Speed Nut Push Button Escutcheon	1 1 1 1 2	SPEAKERS 1,2	
	1-5 1-6 1-7 1-8 2	E73878-001 E304602-002 E72437-010 E304766-001 SBSB3008M	Push Button Escutcheon IND.Sheet Sheet Push Button Ass'y Screw	1 1 1 1 7	POWER	
	3 4 5 6	E48729-009 EX0170007N40S02 E48729-008 E74069-001	Plastic Rivet Felt Spacer Plastic Rivet Head Phone Bracket	3 5 1		
	7 8 9 10 11	SBSB3008CC SBST3006CC E73877-001 E73835-001 E72517-004	Screw Screw Push Button Push Button Knob	2 8 1 2 3	POWER SPEAKERS 1,2 BASS, TREBLE, BALANCE	
	12 13 14 15 16	E74068-001 E304768-001 E11488-001 E24134-008 E25661-001	Push Button Volume Knob Front Bracket Grill Metal Cover	1 1 1 1 1	LOUDNESS VOLUME	E, BS A, G, P, PG, UE, U
▲	17 18 19	E25661-002 E61660-004 E73265-001 QSP1106-004 QSP1106-004BS	Metal Cover Special Screw Special Screw Push Switch Push Switch	1 2 1 1 1	POWER POWER	E, BS Except BS BS
	20 21 22 23 24	E71004-001 E11489-001 E47227-012 SBSB3010Z SBSB3008N	Switch Cover Chassis Base Foot Screw Screw	1 1 4 4 9		E, A, G, ES
▲	25 26	E44928-003 ETP1100-17EA ETP1100-17EABS ETP1100-17FA ETP1100-17UA	Fastener Power Transformer Power Transformer Power Transformer Power Transformer	1 1 1 1 1		BS E, A, G BS P, PG, U UE
▲	27 28 29	ETP1100-17XA E65389-002 E304756-001 QMF51A2-1R25S QMF51E2-1R25SBS	Power Transformer Special Screw Circuit Board Bracket Fuse Fuse	1 1 1 1 1	F001 F001	G E, A, G, BS
▲	30 31 32 33	E74093-001 E302764-001 QSR0085-008U QSR0085-011 E304787-001	Protect Cover Cover Voltage Selector Voltage Selector Protect Cover	1 1 1 1 1		E, A, G, BS P, PG, UE, U P, PG, U UE
	34 35	E25659-001 E25659-002 E25659-003 E25659-004 E70078-001	Rear Panel Rear Panel Rear Panel Rear Panel GND Terminal	1 1 1 1 1		P, PG, U E, A, G BS UE
▲	36 37 38 39	E73273-001 SDSB3008M QMG0301-003 QHS3876-162 QHS3876-162BS	Screw Screw Fuse Holder Cord Stopper Cord Stopper	7 2 1 1 1		P, PG, UE, U P, PG, UE, U Except BS BS
▲	40	QMP2560-244 QMP3900-200 QMP7600-200 QMP9017-008BS QMP7520-200	Power Cord Power Cord Power Cord Power Cord Power Cord	1 1 1 1 1		A E, G P, PG, U BS UE
▲	41 42 43 44	E69291-001 QMF51A2-1R25S QMF51A2-2R5S E71862-001 SBSB3008MCP	Fuse Cover Fuse Fuse Volume Nut Screw	1 1 1 2	F001 F001 POWER	P, PG, UE, U PG, UE, U P
		E303260-099	Rating Label	1		E, G

▲ : Safety Parts

The Marks for Designated Areas

E.....Europe
 A.....Australia
 G.....West Germany
 BS.....U. K.
 P,PG....U. S. Military Market
 UE.....Saudi Arabia
 U.....Other Countries

No mark indicates all areas.

▲	Item	Parts Number	Parts Name	Q'ty	Description	Areas
	1-1 1-2 1-3 1-4	EFP-AX220BKE E25657-001 E72968-001 E60912-003 E73836-001	Front Panel Ass'y Front Panel JVC Mark Speed Nut Push Button Escutcheon	1 1 1 2	SPERKERS 1,2	
	1-5 1-6 1-7 1-8 2	E73878-001 E304602-002 E72437-010 E304766-001 SBSB3008M	Push Button Escutcheon IND.Sheet Sheet Push Button Ass'y Screw	1 1 1 1 7	POWER	
	3 4 5 6	E48729-009 EX0170007N40S02 E48729-008 E74069-001	Prastic Rivet Felt Spacer Prastic Rivet Head Phone Bracket	3 2 5 1		
	7 8 9 10 11	SBSB3008CC SBST3006CC E73877-001 E73835-001 E72517-004	Screw Screw Push Button Push Button Knob	2 8 1 2 3	POWER SPERKERS 1,2 BASS, TREBLE, BALANCE	
	12 13 14 15 16	E74068-001 E304768-001 E11488-001 E24134-008 E25661-001	Push Button Volume Knob Front Bracket Grill Metal Cover	1 1 1 1 1	LOUDNESS VOLUME	E, BS A, G, P, PG, UE, U
▲	17 18 19	E25661-002 E61660-004 E73265-001 QSP1106-004 QSP1106-004BS	Metal Cover Special Screw Special Screw Push Switch Push Switch	1 2 1 1 1	POWER POWER	E, BS Except BS BS
	20 21 22 23 24	E71004-001 E11489-001 E47227-012 SBSB3010Z SBSB3008N	Switch Cover Chassis Base Foot Screw Screw	1 1 4 4 9		E, A, G, ES
▲ ▲ ▲ ▲	25 26	E44928-003 ETP1100-17EA ETP1100-17EA ETP1100-17FA ETP1100-17UA	Fastener Power Transformer Power Transformer Power Transformer Power Transformer	1 1 1 1 1		BS E, A, G BS P, PG, U UE
▲	27 28 29	ETP1100-17XA E65389-002 E304756-001 QMF51A2-1R25S QMF51E2-1R25SBS	Power Transformer Special Screw Circuit Board Bracket Fuse Fuse	1 4 1 1 1	F001 F001	G E, A, G, BS
▲ ▲	30 31 32 33	E74093-001 E302764-001 QSR0085-008U QSR0085-011 E304787-001	Protect Cover Cover Voltage Selector Voltage Selector Protect Cover	1 1 1 1 1		E, A, G, BS P, PG, UE, U P, PG, U UE
	34 35	E25659-001 E25659-002 E25659-003 E25659-004 E70078-001	Rear Panel Rear Panel Rear Panel Rear Panel GND Terminal	1 1 1 1 1		P, PG, U E, A, G BS UE
▲ ▲	36 37 38 39	E73273-001 SDSB3008M QMG0301-003 QHS3876-162 QHS3876-162BS	Screw Screw Fuse Holder Cord Stopper Cord Stopper	7 2 1 1 1		P, PG, UE, U P, PG, UE, U Except BS BS
▲ ▲ ▲ ▲ ▲	40	QMP2560-244 QMP3900-200 QMP7600-200 QMP9017-008BS QMP7520-200	Power Cord Power Cord Power Cord Power Cord Power Cord	1 1 1 1 1		A E, G P, PG, U BS UE
▲ ▲	41 42 43 44	E69291-001 QMF51A2-1R25S QMF51A2-2R5S E71862-001 SBSB3008MCP	Fuse Cover Fuse Fuse Volume Nut Screw	1 1 1 2	F001 F001 POWER	P, PG, UE, U PG, UE, U P
		E303260-099	Rating Label	1		E, G

▲ :Safety Parts

The Marks for Designated Areas

E.....Europe
 A.....Australia
 G.....West Germany
 BS.....U. K.
 P,PG....U. S. Military Market
 UE.....Saudi Arabia
 U.....Other Countries

No mark indicates all areas.

▲	Item	Parts Number	Parts Name	Q'ty	Description	Areas
	1 1-1 1-2 1-3 1-4	EFP-AX220BKE E25657-001 E72968-001 E60912-003 E73836-001	Front Panel Ass'y Front Panel JVC Mark Speed Nut Push Button Escutcheon	1 1 1 1 2	SPERKERS 1,2	
	1-5 1-6 1-7 1-8 2	E73878-001 E304602-002 E72437-010 E304766-001 SBSB3008M	Push Button Escutcheon IND. Sheet Sheet Push Button Ass'y Screw	1 1 1 1 7	POWER	
	3 4 5 6	E48729-009 EX0170007N40S02 E48729-008 E74069-001	Prastic Rivet Felt Spacer Prastic Rivet Head Phone Bracket	3 2 5 1		
	7 8 9 10 11	SBSB3008CC SBST3006CC E73877-001 E73835-001 E72517-004	Screw Screw Push Button Push Button Knob	2 8 1 2 3	POWER SPERKERS 1,2 BASS, TREBLE, BALANCE	
	12 13 14 15 16	E74068-001 E304768-001 E11488-001 E24134-008 E25661-001	Push Button Volume Knob Front Bracket Grill Metal Cover	1 1 1 1 1	LOUDNESS VOLUME	E, BS A, G, P, PG, UE, U
▲	17 18 19	E25661-002 E61660-004 E73265-001 QSP1106-004 QSP1106-004BS	Metal Cover Special Screw Special Screw Push Switch Push Switch	1 2 1 1 1	POWER POWER	E, BS Except BS BS
	20 21 22 23 24	E71004-001 E11489-001 E47227-012 SBSB3010Z SBSB3008N	Switch Cover Chassis Base Foot Screw Screw	1 1 4 4 9		E, A, G, ES
▲ ▲ ▲ ▲	25 26	E44928-003 ETP1100-17EA ETP1100-17EABS ETP1100-17FA ETP1100-17UA	Fastener Power Transformer Power Transformer Power Transformer Power Transformer	1 1 1 1 1		BS E, A, G BS P, PG, U UE
▲	27 28 29	ETP1100-17XA E65389-002 E304756-001 QMF51A2-1R25S QMF51E2-1R25SBS	Power Transformer Special Screw Circuit Board Bracket Fuse Fuse	1 4 1 1 1	F001 F001	G E, A, G, BS
▲	30 31 32 33	E74093-001 E302764-001 QSR0085-008U QSR0085-011 E304787-001	Protect Cover Cover Voltage Selector Voltage Selector Protect Cover	1 1 1 1 1		E, A, G, BS P, PG, UE, U P, PG, U UE
	34 35	E25659-001 E25659-002 E25659-003 E25659-004 E70078-001	Rear Panel Rear Panel Rear Panel Rear Panel GND Terminal	1 1 1 1 1		P, PG, U E, A, G BS UE
▲	36 37 38 39	E73273-001 SDSB3008M QMG0301-003 QHS3876-162 QHS3876-162BS	Screw Screw Fuse Holder Cord Stopper Cord Stopper	7 2 1 1 1		P, PG, UE, U P, PG, UE, U Except BS BS
▲ ▲ ▲ ▲	40	QMP2560-244 QMP3900-200 QMP7600-200 QMP9017-008BS QMP7520-200	Power Cord Power Cord Power Cord Power Cord Power Cord	1 1 1 1 1		A E, G P, PG, U BS UE
▲ ▲	41 42 43 44	E69291-001 QMF51A2-1R25S QMF51A2-2R5S E71862-001 SBSB3008MCP	Fuse Cover Fuse Fuse Volume Nut Screw	1 1 1 2	F001 F001 POWER	P, PG, UE, U PG, UE, U P
		E303260-099	Rating Label	1		E, G

▲ :Safety Parts

The Marks for Designated Areas

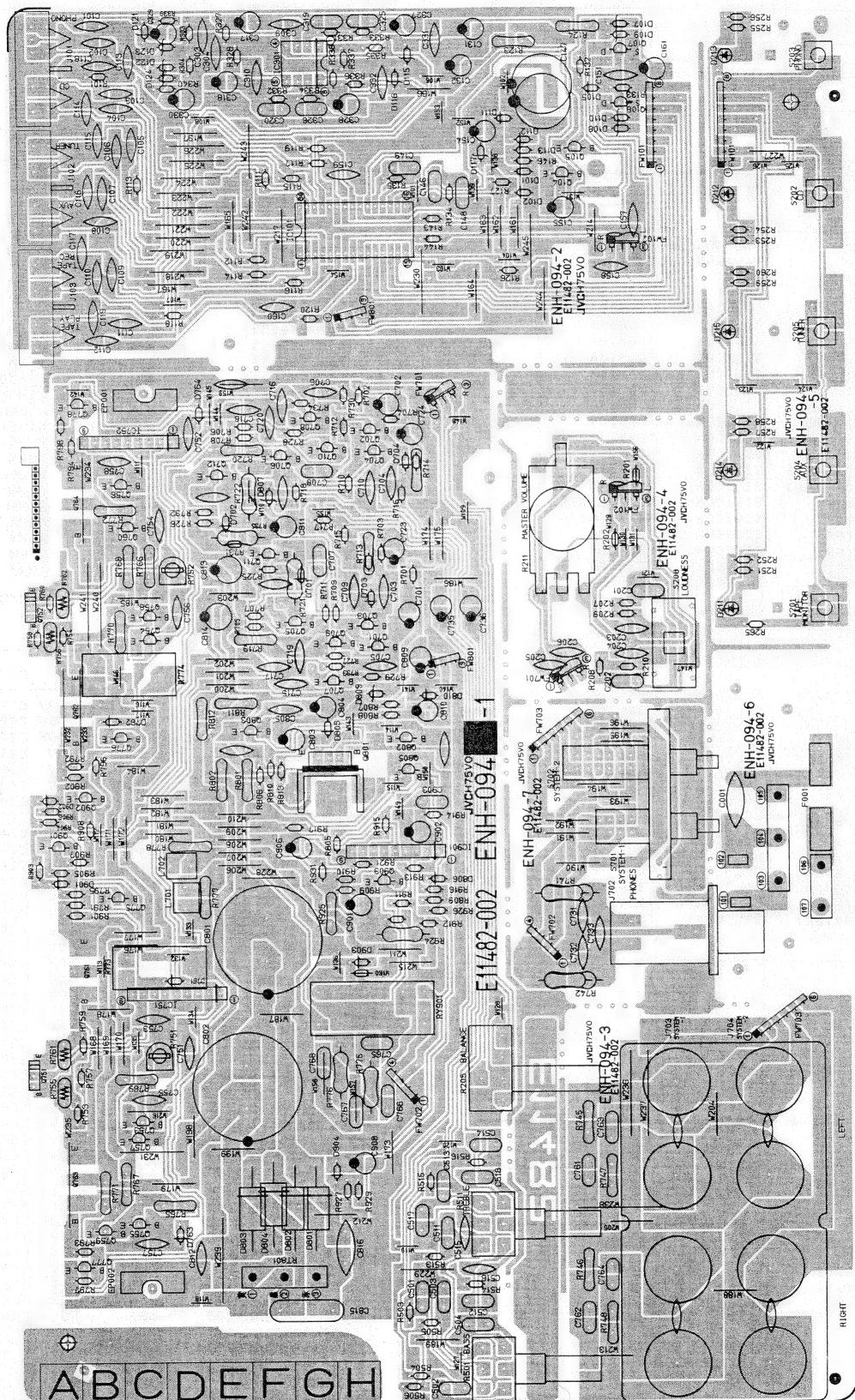
E.....Europe
 A.....Australia
 G.....West Germany
 BS.....U. K.
 P,PG....U. S. Military Market
 UE.....Saudi Arabia
 U.....Other Countries

No mark indicates all areas.

Printed Circuit Board Ass'y and Parts List

■ ENH-094□ Main PC Board Ass'y

Note: ENH-094□ varies according to the areas employed. See note (1) when placing an order.



Note(1)

PC Board Ass'y	Designated Areas
ENH-094 A	U. S. Military Market & Other Countries
ENH-094 B	Saudi Arabia
ENH-094 C	Europe, Australia
ENH-094 D	West Germany
ENH-094 E BS	U. K.

DIODES

△	ITEM	PART NUMBER	DESCRIPTION	AREA	MAKER
	D101	ISS133	SILICON		ROHM
	D102	ISS133	SILICON		ROHM
	D105	ISS133	SILICON		ROHM
	D111	ISS133	SILICON		ROHM
	D112	ISS133	SILICON		ROHM
	D113	MTZ5.6JC	ZENER		ROHM
	D115	MTZ13JC	ZENER		ROHM
	D116	MTZ13JC	ZENER		ROHM
	D117	MTZ6.8JC	ZENER		ROHM
	D121	MTZ13JC	ZENER		ROHM
	D122	MTZ13JC	ZENER		ROHM
	D123	MTZ13JC	ZENER		ROHM
	D124	MTZ13JC	ZENER		ROHM
	D211	SLR-34VR3F	L.E.D.		ROHM
	D212	SLR-34DU3F	L.E.D.		ROHM
	D213	SLR-34DU3F	L.E.D.		ROHM
	D214	SLR-34DU3F	L.E.D.		ROHM
	D215	SLR-34DU3F	L.E.D.		ROHM
	D701	ISS133	SILICON		ROHM
	D702	ISS133	SILICON		ROHM
	D703	ISS133	SILICON		ROHM
	D704	ISS133	SILICON		ROHM
	D761	ISS133	SILICON		ROHM
	D762	ISS133	SILICON		ROHM
	D763	ISS133	SILICON		ROHM
	D764	ISS133	SILICON		ROHM
△	D801	30DL2FC	SILICON		NIHONINTER
△	D802	30DL2FC	SILICON		NIHONINTER
△	D803	30DL2FC	SILICON		NIHONINTER
△	D804	30DL2FC	SILICON		NIHONINTER
△	D805	MTZ15JC	ZENER		ROHM
	D806	ISS133	SILICON		ROHM
	D807	MTZ18JC	ZENER		ROHM
	D809	MTZ16JC	ZENER		ROHM
	D810	MTZ16JC	ZENER		ROHM
	D901	ISS133	SILICON		ROHM
	D902	ISS133	SILICON		ROHM
	D903	ISS133	SILICON		ROHM
	D904	ISS133	SILICON		ROHM

CAPACITORS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
△	C001	QCZ9019-472	4700PF	250V CERAMIC
△	C001	QCZ9019-472	4700PF	250V CERAMIC
△	C001	QCZ9019-472BS	4700PF	250V CERAMIC
C101	QCS21HJ-101	100PF	50V CERAMIC	A
C101	QCS21HJ-101	100PF	50V CERAMIC	B
C101	QCS21HJ-101	100PF	50V CERAMIC	C
C101	QCS21HJ-101	100PF	50V CERAMIC	EBS
C101	QCS21HJ-101	100PF	50V CERAMIC	D
C101	QCS21HJ-221	220PF	50V CERAMIC	D
C102	QCS21HJ-101	100PF	50V CERAMIC	A
C102	QCS21HJ-101	100PF	50V CERAMIC	B
C102	QCS21HJ-101	100PF	50V CERAMIC	C
C102	QCS21HJ-221	220PF	50V CERAMIC	EBS
C102	QCS21HJ-221	220PF	50V CERAMIC	D
C103	QCS21HJ-221	220PF	50V CERAMIC	D
C104	QCS21HJ-221	220PF	50V CERAMIC	D
C105	QCS21HJ-221	220PF	50V CERAMIC	D
C106	QCS21HJ-221	220PF	50V CERAMIC	D
C107	QCS21HJ-221	220PF	50V CERAMIC	D
C108	QCS21HJ-221	220PF	50V CERAMIC	D
C109	QCS21HJ-331	330PF	50V CERAMIC	D
C110	QCS21HJ-331	330PF	50V CERAMIC	D
C111	QCS21HJ-221	220PF	50V CERAMIC	D
C112	QCS21HJ-221	220PF	50V CERAMIC	D
C113	QCF21HP-473	0.047MF	50V CERAMIC	
C114	QCF21HP-223	0.022MF	50V CERAMIC	
C115	QCF21HP-223	0.022MF	50V CERAMIC	
C116	QCF21HP-223	0.022MF	50V CERAMIC	
C117	QCF21HP-223	0.022MF	50V CERAMIC	
C118	QCF21HP-473	0.047MF	50V CERAMIC	
C131	QETB1EM-107	100MF	25V ELECTRO	
C132	QETB1EM-107	100MF	25V ELECTRO	
C146	QFN81HJ-562	5600PF	50V MYLAR	
C147	QETB0JM-228	2200MF	6.3V ELECTRO	
C148	QFN81HJ-562	5600PF	50V MYLAR	
C149	QFN81HK-473	0.047MF	50V MYLAR	
C151	QCS21HJ-331	330PF	50V CERAMIC	
C154	QETB1CM-107	100MF	16V ELECTRO	
C155	QETB1HM-474	0.47MF	50V ELECTRO	
C161	QEN51HM-105	1MF	50V NON POLE	
C162	QFN81HK-103	0.01MF	50V MYLAR	
C201	QFN81HK-333	0.033MF	50V MYLAR	
C202	QFN81HK-333	0.033MF	50V MYLAR	
C203	QCS21HJ-181	180PF	50V CERAMIC	
C204	QCS21HJ-181	180PF	50V CERAMIC	
C205	QCS21HJ-470	47PF	50V CERAMIC	D

△ : SAFETY PARTS

I. C. S

△	ITEM	PART NUMBER	DESCRIPTION	AREA	MAKER
	IC101	LC7818	I.C.		SANYO
	IC301	NJM4560DD	I.C.		JRC
	IC751	VC5022(X,Y)	I.C.		ROHM
	IC752	VC5022(X,Y)	I.C.		ROHM
	IC901	TA7317P	I.C.		TOSHIBA

CAPACITORS

ITEM	PART NUMBER	DESCRIPTION	AREA
C206	QCS21HJ-470	47PF 50V CERAMIC	D
C303	QCS21HJ-101	100PF 50V CERAMIC	A
C303	QCS21HJ-101	100PF 50V CERAMIC	B
C303	QCS21HJ-101	100PF 50V CERAMIC	C
C303	QCS21HJ-101	100PF 50V CERAMIC	EBS
C303	QCS21HJ-331	330PF 50V CERAMIC	D
C304	QCS21HJ-101	100PF 50V CERAMIC	A
C304	QCS21HJ-101	100PF 50V CERAMIC	B
C304	QCS21HJ-101	100PF 50V CERAMIC	C
C304	QCS21HJ-101	100PF 50V CERAMIC	EBS
C304	QCS21HJ-331	330PF 50V CERAMIC	D
C309	QCS21HJ-101	100PF 50V CERAMIC	
C310	QCS21HJ-101	100PF 50V CERAMIC	
C317	QETB1AM-107	100MF 10V ELECTRO	
C318	QETB1AM-107	100MF 10V ELECTRO	
C319	QFN81HJ-182	1800PF 50V MYLAR	
C320	QFN81HJ-182	1800PF 50V MYLAR	
C325	QFN81HJ-682	6800PF 50V MYLAR	
C326	QFN81HJ-682	6800PF 50V MYLAR	
C327	EETB2AM-106E	10MF 100V ELECTRO	
C328	EETB2AM-106E	10MF 100V ELECTRO	
C329	EEZ1601-226	22MF 16V ELECTRO	
C330	EEZ1601-226	22MF 16V ELECTRO	
C501	QFN81HK-153	0.015MF 50V MYLAR	
C502	QFN81HK-153	0.015MF 50V MYLAR	
C503	QFN81HK-823	0.082MF 50V MYLAR	
C504	QFN81HK-823	0.082MF 50V MYLAR	
C511	QFN81HK-332	3300PF 50V MYLAR	
C512	QFN81HK-332	3300PF 50V MYLAR	
C513	QFN81HK-183	0.018MF 50V MYLAR	
C514	QFN81HK-183	0.018MF 50V MYLAR	
C515	QCS21HJ-221	220PF 50V CERAMIC	
C516	QCS21HJ-221	220PF 50V CERAMIC	
C517	QFN81HK-122	1200PF 50V MYLAR	
C518	QFN81HK-122	1200PF 50V MYLAR	
C701	EEZ1601-226	22MF 16V ELECTRO	
C702	EEZ1601-226	22MF 16V ELECTRO	
C703	QCS21HJ-470	47PF 50V CERAMIC	
C704	QCS21HJ-470	47PF 50V CERAMIC	
C705	QCS21HJ-101	100PF 50V CERAMIC	A
C705	QCS21HJ-101	100PF 50V CERAMIC	B
C705	QCS21HJ-101	100PF 50V CERAMIC	C
C705	QCS21HJ-470	47PF 50V CERAMIC	EBS
C706	QCS21HJ-101	100PF 50V CERAMIC	A
C706	QCS21HJ-101	100PF 50V CERAMIC	B
C706	QCS21HJ-101	100PF 50V CERAMIC	C
C706	QCS21HJ-470	47PF 50V CERAMIC	EBS
C707	QFN81HK-332	3300PF 50V MYLAR	
C708	QFN81HK-332	3300PF 50V MYLAR	
C709	QCS21HJ-100	10PF 50V CERAMIC	
C710	QCS21HJ-100	10PF 50V CERAMIC	
C715	QCS21HJ-330	33PF 50V CERAMIC	
C716	QCS21HJ-330	33PF 50V CERAMIC	
C717	QCS21HJ-330	33PF 50V CERAMIC	
C718	QCS21HJ-330	33PF 50V CERAMIC	
C719	QCS21HJ-220	22PF 50V CERAMIC	
C720	QCS21HJ-220	22PF 50V CERAMIC	
C723	QETB1CM-476	47MF 16V ELECTRO	
C724	QETB1CM-476	47MF 16V ELECTRO	
C731	QCS21HJ-101	100PF 50V CERAMIC	D
C732	QCS21HJ-101	100PF 50V CERAMIC	D
C733	QCS21HJ-101	100PF 50V CERAMIC	D
C735	QETB1HM-105	1MF 50V ELECTRO	
C736	QETB1HM-105	1MF 50V ELECTRO	
C751	QCF21HP-103	0.01MF 50V CERAMIC	
C752	QCF21HP-103	0.01MF 50V CERAMIC	
C753	QCF21HP-103	0.01MF 50V CERAMIC	
C754	QCF21HP-103	0.01MF 50V CERAMIC	
C755	QCS21HJ-470	47PF 50V CERAMIC	
C756	QCS21HJ-470	47PF 50V CERAMIC	
C757	QCS21HJ-470	47PF 50V CERAMIC	
C758	QCS21HJ-470	47PF 50V CERAMIC	
C761	QFN81HK-103	0.01MF 50V MYLAR	D
C762	QFN81HK-103	0.01MF 50V MYLAR	D
C763	QFN81HK-103	0.01MF 50V MYLAR	D
C764	QFN81HK-103	0.01MF 50V MYLAR	D
C765	QFN81HK-104	0.1MF 50V MYLAR	C
C765	QFN81HK-104	0.1MF 50V MYLAR	D
C766	QFN81HK-104	0.1MF 50V MYLAR	EBS
C766	QFN81HK-473	0.047MF 50V MYLAR	A
C765	QFN81HK-473	0.047MF 50V MYLAR	B
C766	QFN31HK-104	0.1MF 50V MYLAR	B
C766	QFN81HK-104	0.1MF 50V MYLAR	C
C766	QFN81HK-104	0.1MF 50V MYLAR	D
C766	QFN81HK-104	0.1MF 50V MYLAR	EBS
C767	QFN81HK-104	0.1MF 50V MYLAR	B
C767	QFN81HK-104	0.1MF 50V MYLAR	C
C767	QFN81HK-104	0.1MF 50V MYLAR	D
C767	QFN81HK-104	0.1MF 50V MYLAR	EBS
C768	QFN81HK-104	0.1MF 50V MYLAR	B
C768	QFN81HK-104	0.1MF 50V MYLAR	C
C768	QFN81HK-104	0.1MF 50V MYLAR	EBS

CAPACITORS

ITEM	PART NUMBER	DESCRIPTION	AREA
C768	QFN81HK-104	0.1MF 50V MYLAR	D EBS
C768	QFN81HK-104	0.1MF 50V MYLAR	EBS
C801	QEZO086-688E	6800MF 50V NON POLE	
C802	QEZO086-688E	6800MF 50V NON POLE	
C803	QEHC1HM-476	47MF 50V ELECTRO	
C804	QETB1HM-476	47MF 50V ELECTRO	
C805	QCS21HJ-101	100PF 50V CERAMIC	
C809	QETB1EM-476	47MF 25V ELECTRO	
C810	QETB1EM-476	47MF 25V ELECTRO	
C811	QETB1EM-106	10MF 25V ELECTRO	
C812	QCS21HJ-821	820PF 50V CERAMIC	D
C813	QETB1HM-476	47MF 50V ELECTRO	
C814	QETB1HM-476	47MF 50V ELECTRO	
C816	QCE22HP-103A	0.01MF 500V CERAMIC	
C901	QETB1HM-226	22MF 50V ELECTRO	
C902	QETB1AM-107	100MF 10V ELECTRO	
C903	QFN81HK-102	1000PF 50V MYLAR	
C906	QETB1HM-226	22MF 50V ELECTRO	
C908	QETB1HM-105	1MF 50V ELECTRO	

RESISTORS

ITEM	PART NUMBER	DESCRIPTION	AREA
R101	QRD167J-4R7	4.7	1/6W CARBON
R111	QRD167J-331	330	1/6W CARBON
R112	QRD167J-331	330	1/6W CARBON
R113	QRD167J-331	330	1/6W CARBON
R114	QRD167J-331	330	1/6W CARBON
R115	QRD167J-331	330	1/6W CARBON
R116	QRD167J-331	330	1/6W CARBON
R117	QRD167J-331	330	1/6W CARBON
R118	QRD167J-331	330	1/6W CARBON
R119	QRD167J-331	330	1/6W CARBON
R120	QRD167J-331	330	1/6W CARBON
R123	QRZ0077-101	100	1/4W FUSIBLE
R124	QRZ0077-101	100	1/4W FUSIBLE
R126	QRD167J-104	100K	1/6W CARBON
R127	QRD167J-104	100K	1/6W CARBON
R132	QRD167J-103	10K	1/6W CARBON
R133	QRD167J-105	1M	1/6W CARBON
R134	QRD167J-103	10K	1/6W CARBON
R135	QRD167J-474	470K	1/6W CARBON
R143	QRD167J-681	680	1/6W CARBON
R144	QRD167J-681	680	1/6W CARBON
R146	QRD167J-122	1.2K	1/6W CARBON
R205	QVA949W-EF5B	250K	VARIABLE
R207	QRD167J-223	22K	1/6W CARBON
R208	QRD167J-223	22K	1/6W CARBON
R209	QRD167J-105	1M	1/6W CARBON
R210	QRD167J-105	1M	1/6W CARBON
R211	QVN9A3B-5F5V	250K	VARIABLE
R251	QRD167J-122	1.2K	1/6W CARBON
R252	QRD167J-122	1.2K	1/6W CARBON
R253	QRD167J-122	1.2K	1/6W CARBON
R254	QRD167J-122	1.2K	1/6W CARBON
R255	QRD167J-122	1.2K	1/6W CARBON
R256	QRD167J-122	1.2K	1/6W CARBON
R257	QRD167J-122	1.2K	1/6W CARBON
R258	QRD167J-122	1.2K	1/6W CARBON
R259	QRD167J-122	1.2K	1/6W CARBON
R260	QRD167J-122	1.2K	1/6W CARBON
R265	QRD167J-104	100K	1/6W CARBON
R303	QRD167J-473	47K	1/6W CARBON
R304	QRD167J-473	47K	1/6W CARBON
R327	QRD167J-821	820	1/6W CARBON
R328	QRD167J-821	820	1/6W CARBON
R331	QRD167J-393	39K	1/6W CARBON
R332	QRD167J-393	39K	1/6W CARBON
R333	QRD167J-474	470K	1/6W CARBON
R334	QRD167J-474	470K	1/6W CARBON
R335	QRD167J-471	470	1/6W CARBON
R336	QRD167J-471	470	1/6W CARBON
R337	QRD167J-104	100K	1/6W CARBON
R338	QRD167J-104	100K	1/6W CARBON
R339	QRD167J-222	2.2K	1/6W CARBON
R340	QRD167J-222	2.2K	1/6W CARBON
R501	QVD898C-E15B	100K	VARIABLE
R503	QRD167J-203	20K	1/6W CARBON
R504	QRD167J-203	20K	1/6W CARBON
R505	QRD167J-362	3.6K	1/6W CARBON
R506	QRD167J-362	3.6K	1/6W CARBON
R511	QVD898C-E15B	100K	VARIABLE
R513	QRD167J-472	4.7K	1/6W CARBON
R514	QRD167J-472	4.7K	1/6W CARBON
R515	QRD167J-821	820	1/6W CARBON
R516	QRD167J-821	820	1/6W CARBON
R701	QRD167J-102	1K	1/6W CARBON
R702	QRD167J-102	1K	1/6W CARBON
R703	QRD167J-104	100K	1/6W CARBON
R704	QRD167J-104	100K	1/6W CARBON
R705	QRD167J-222	2.2K	1/6W CARBON
R706	QRD167J-222	2.2K	1/6W CARBON
R707	QRD167J-222	2.2K	1/6W CARBON

▲ : SAFETY PARTS

RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	R708	QRD167J-222	2.2K 1/6W CARBON	
	R709	QRD167J-103	10K 1/6W CARBON	
	R710	QRD167J-103	10K 1/6W CARBON	
	R711	QRD167J-101	100 1/6W CARBON	
	R712	QRD167J-101	100 1/6W CARBON	
	R713	QRD167J-821	820 1/6W CARBON	
	R714	QRD167J-821	820 1/6W CARBON	
	R715	QRD167J-163	16K 1/6W CARBON	
	R716	QRD167J-163	16K 1/6W CARBON	
	R717	QRD167J-823	82K 1/6W CARBON	
	R718	QRD167J-823	82K 1/6W CARBON	
△	R719	QRD14CJ-121S	120 1/4W UNF.CARBON	
△	R720	QRD14CJ-121S	120 1/4W UNF.CARBON	
△	R721	QRD125J-822	8.2K 1/2W UNF.CARBON	
△	R722	QRD125J-822	8.2K 1/2W UNF.CARBON	
	R725	QRD167J-391	390 1/6W CARBON	
	R726	QRD167J-391	390 1/6W CARBON	
	R727	QRD167J-152	1.5K 1/6W CARBON	
	R728	QRD167J-152	1.5K 1/6W CARBON	
	R729	QRD167J-333	33K 1/6W CARBON	
	R730	QRD167J-333	33K 1/6W CARBON	
	R731	QRD167J-391	390 1/6W CARBON	
	R732	QRD167J-391	390 1/6W CARBON	
	R733	QRD167J-152	1.5K 1/6W CARBON	
	R734	QRD167J-152	1.5K 1/6W CARBON	
△	R735	QRG012J-332A	3.3K 1W O.M.FILM	
△	R741	QRG022J-331A	330 2W O.M.FILM	
△	R742	QRG022J-331A	330 2W O.M.FILM	
△	R745	QRD14CJ-100S	10 1/4W UNF.CARBON D	
△	R746	QRD14CJ-100S	10 1/4W UNF.CARBON D	
△	R747	QRD14CJ-100S	10 2/4W UNF.CARBON D	
△	R748	QRD14CJ-100S	10 1/4W UNF.CARBON D	
	R751	QVZ3518-471	470 0.1W VARIABLE	
	R752	QVZ3518-471	470 0.1W VARIABLE	
	R753	QRD167J-101	100 1/6W CARBON	
	R754	QRD167J-101	100 1/6W CARBON	
	R755	ERT-D2WFL351S	350 1/4W THERMISTER	
	R756	ERT-D2WFL351S	350 1/4W THERMISTER	
	R757	QRD167J-471	470 1/6W CARBON	
	R758	QRD167J-471	470 1/6W CARBON	
	R759	QRD167J-391	390 1/6W CARBON	
	R760	QRD167J-391	390 1/6W CARBON	
	R761	ERT-D2WHL202S	2K 1/4W THRMISTOR	
	R762	ERT-D2WHL202S	2K 1/4W THRMISTOR	
△	R765	QRZ0077-272	2.7K 1/4W FUSIBLE	
△	R766	QRZ0077-272	2.7K 1/4W FUSIBLE	
△	R767	QRZ0077-471	470 1/4W FUSIBLE	
△	R768	QRZ0077-471	470 1/4W FUSIBLE	
△	R769	QRZ0077-100	10 1/4W FUSIBLE	
△	R770	QRZ0077-100	10 1/4W FUSIBLE	
△	R771	QRZ0077-100	10 1/4W FUSIBLE	
△	R772	QRZ0077-100	10 1/4W FUSIBLE	
△	R773	ERF032K-R22	0.22 3W CEMENT	
△	R774	ERF032K-R22	0.22 3W CEMENT	
△	R775	QRG012J-100A	10 1W O.M.FILM	
△	R776	QRG012J-100A	10 1W O.M.FILM	
△	R777	QRD14CJ-330S	33 1/4W UNF.CARBON	
△	R778	QRD14CJ-330S	33 1/4W UNF.CARBON	
	R791	QRD167J-391	390 1/6W CARBON	
	R792	QRD167J-391	390 1/6W CARBON	
	R793	QRD167J-391	390 1/6W CARBON	
	R794	QRD167J-391	390 1/6W CARBON	
	R795	QRD167J-331	330 1/6W CARBON	
	R796	QRD167J-331	330 1/6W CARBON	
	R797	QRD167J-331	330 1/6W CARBON	
	R798	QRD167J-331	330 1/6W CARBON	
△	R801	QRZ0077-330	33 1/4W FUSIBLE	
△	R802	QRZ0077-330	33 1/4W FUSIBLE	
	R805	QRD167J-823	82K 1/6W CARBON	
	R806	QRD167J-331	330 1/6W CARBON	
	R807	QRD167J-223	22K 1/6W CARBON	
	R808	QRD167J-203	20K 1/6W CARBON	
	R809	QRD167J-563	56K 1/6W CARBON	
	R810	QRD167J-163	16K 1/6W CARBON	
△	R811	QRZ0077-330	33 1/4W FUSIBLE	
△	R812	QRZ0077-330	33 1/4W FUSIBLE	
	R813	QRD167J-103	10K 1/6W CARBON	
	R901	QRD167J-272	2.7K 1/6W CARBON	
	R902	QRD167J-272	2.7K 1/6W CARBON	
	R903	QRD167J-183	18K 1/6W CARBON	
	R904	QRD167J-183	18K 1/6W CARBON	
	R905	QRD167J-473	47K 1/6W CARBON	
	R906	QRD167J-473	47K 1/6W CARBON	
	R907	QRD167J-223	22K 1/6W CARBON	
	R908	QRD167J-223	22K 1/6W CARBON	
	R909	QRD167J-332	3.3K 1/6W CARBON	
	R910	QRD167J-103	10K 1/6W CARBON	
	R911	QRD167J-104	100K 1/6W CARBON	
	R912	QRD167J-823	82K 1/6W CARBON	
	R913	QRD167J-473	47K 1/6W CARBON	

RESISTORS

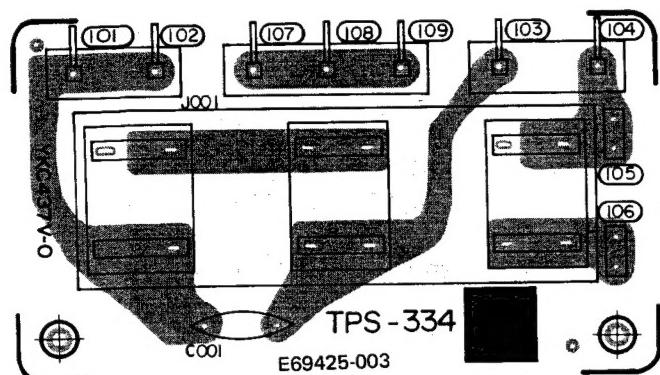
△	ITEM	PART NUMBER	DESCRIPTION	AREA
	R914	QRD167J-104	100K 1/6W CARBON	
	R915	QRD167J-683	68K 1/6W CARBON	
	R916	QRD167J-563	56K 1/6W CARBON	
	R917	QRD167J-163	16K 1/6W CARBON	
	R921	QRD167J-224	220K 1/6W CARBON	
△	R924	QRG022J-821A	820 2W O.M.FILM	
△	R925	QRD14CJ-470S	47 1/4W UNF.CARBON	
	R926	QRD167J-153	15K 1/6W CARBON	
	R927	QRD167J-472	4.7K 1/6W CARBON	
	R929	QRD167J-562	5.6K 1/6W CARBON	
	R931	QRD167J-223	22K 1/6W CARBON	

OTHERS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
		EMG7331-001	FUSE CLIP	C
		EMG7331-001	FUSE CLIP	D
		EMG7331-001	FUSE CLIP	EBS
		E11482-002	CIRCUIT BOARD	A
		E11482-002	CIRCUIT BOARD	B
		E11482-002	CIRCUIT BOARD	C
		E11482-002	CIRCUIT BOARD	D
		E302267-007	HEAT SINK	EBS
		E304769-001	HEAT SINK BRACKET (L)	
		E304769-002	HEAT SINK BRACKET (R)	
		E65508-002	TAB	C
		E65508-002	TAB	D
		E65508-002	TAB	EBS
		E67132-T1R25	FUSE LABEL	C
		E67132-T1R25	FUSE LABEL	D
		E67132-T1R25	FUSE LABEL	EBS
		E67764-202	WRAPPING TERMINAL	C
		E67764-202	WRAPPING TERMINAL	D
		E67764-202	WRAPPING TERMINAL	EBS
		E67764-203	TERMINAL.ASSY	C
		E67764-203	TERMINAL.ASSY	D
		E67764-203	TERMINAL.ASSY	EBS
		E70306-001	HEAT SINK	
		E73265-001	SCREW	
		SBSB3008CC	SCREW	
		SBSB3008CC	SCREW	
		SBSB3012CC	SCREW	
	J101	EMN00TV-405A	PIN JACK ASSY	
	J102	EMN00TV-402A	PIN JACK ASSY	
	J103	EMN00TV-402A	PIN JACK ASSY	
	J702	QMS6A40-021	JACK ASSY	
	J703	EMBOOTP-801C	SPBAKER TERMINAL	
	J704	EMBOOTP-801C	SPBAKER TERMINAL	
	L701	EQL0001-R45	INDUCTOR	
	L702	EQL0001-R45	INDUCTOR	
	S201	ESP0001-007	PUSH SWITCH	
	S202	ESP0001-007	PUSH SWITCH	
	S203	ESP0001-007	PUSH SWITCH	
	S204	ESP0001-007	PUSH SWITCH	
	S205	ESP0001-007	PUSH SWITCH	
	S208	QSTL101-E01	PUSH SWITCH	
	S701	QST9241-E01	PUSH SWITCH	
	S702	QST9241-E01	PUSH SWITCH	
	EP001	E70859-001	EARTH PLATE	
	EP002	E70859-001	EARTH PLATE	D
	RT801	E67764-103	WRAPPING TERMINAL	
	RY901	ESK5D24-218	RELAY	

△ : SAFETY PARTS

■ TPS-334 □ AC Outlet PC Board Ass'y



Note (1)

PC Board Ass'y	Designated Areas
TPS-334 [A]	U. S. Military Market & Other Countries
TPS-334 [B]	Saudi Arabia

CAPACITORS

▲ ITEM	PART NUMBER	DESCRIPTION			AREA
▲ C001	QCZ9018-103	0.01MF	250V	CERAMIC	A
▲ C001	QCZ9038-103	0.01MF	250V	CERAMIC	B

OTHERS

▲ ITEM	PART NUMBER	DESCRIPTION	AREA
	E65508-002	TAB	
	E67764-302	WRAPPING TERMINAL	
	E67764-402	WRAPPING TERMINAL	
	E67764-403	WRAPPING TERMINAL	
	E69425-002	CIRCUIT BOARD	
▲	QMC0637-004	AC SOCKET	

△ : SAFETY PARTS

Accessories List

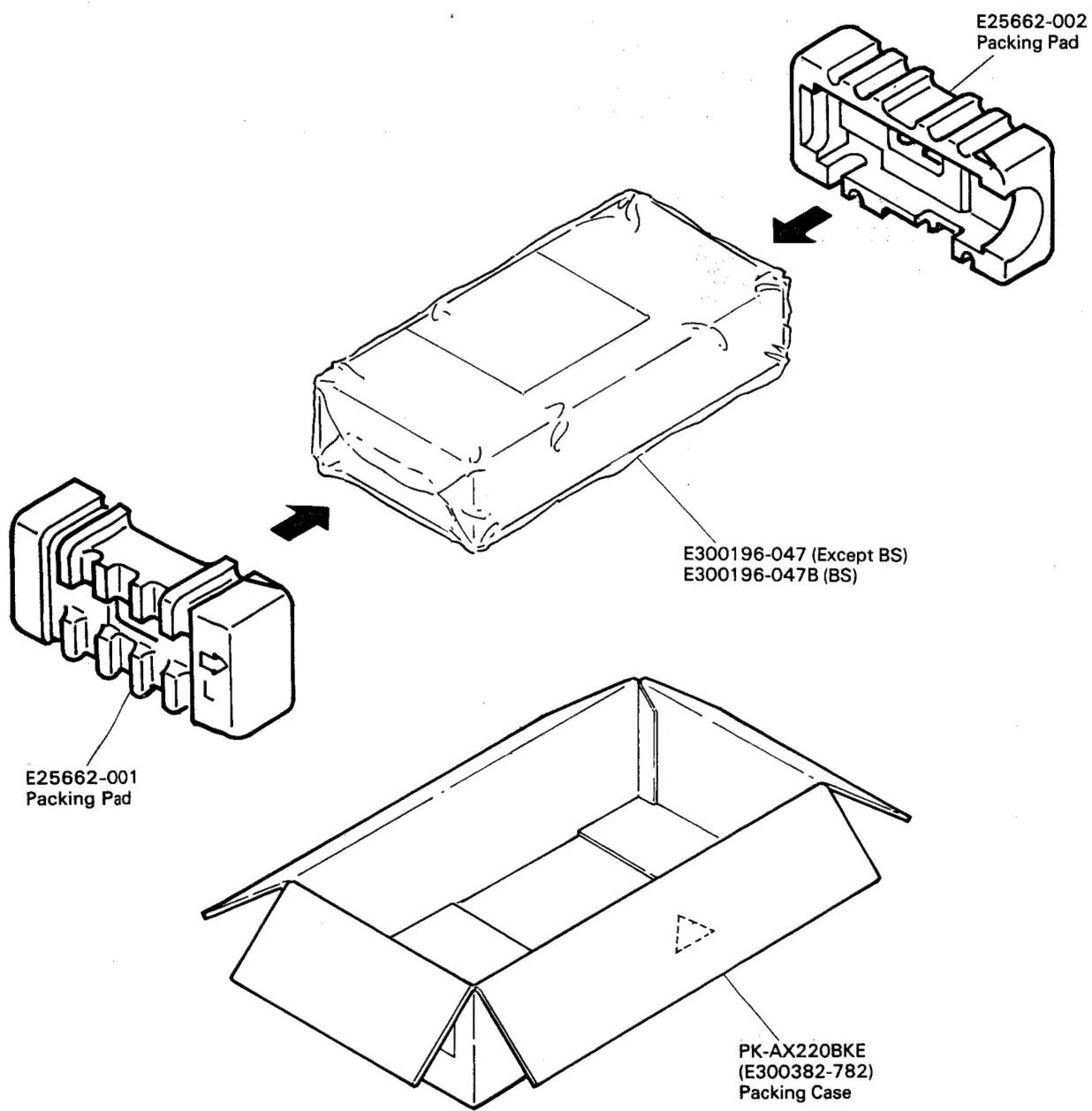
▲	Part Number	Part Name	Q'ty	Description	Areas
	E30580-1402B E30580-1402BBS BT20029C BT20098 BT20046C	Instruction Book Instruction Book Warranty Card Warranty Card Service Information Card	1 1 1 1 1	for Australia for New Zealand	Except BS BS A A P, PG
	BT20048C BT20060 BT20066 BT20064 QZL1008-001	Warranty Card Warranty Card EEC Agency Warranty Card FTZ Information Sheet	1 1 1 1 1		P, PG BS G, BS G G
▲	E04056 QMF51A2-1R25S QMF51A2-2R5S QMF51A2-2R0S E67142-T1R25	Siemens Plug Fuse Fuse Fuse Fuse Label	1 1 1 1 1		PG, U P PG, U UE P
	E67142-T2R5 E67142-T2R0 E6581-4 E41202-2 E41202-2B	Fuse Label Fuse Label Envelope Envelope Envelope	1 1 1 1 1	for Fuse & Fuse Label for Instruction Book for Instruction Book	PG, U UE P, PG, UE, U Except BS BS

△:Safety Parts

E.....Europe
 A.....Australia
 G.....West Germany
 BS.....U. K.
 P, PG....U. S. Military Market
 UE.....Saudi Arabia
 U.....Other Countries

No mark indicates all areas.

Packing Materials and Part Numbers

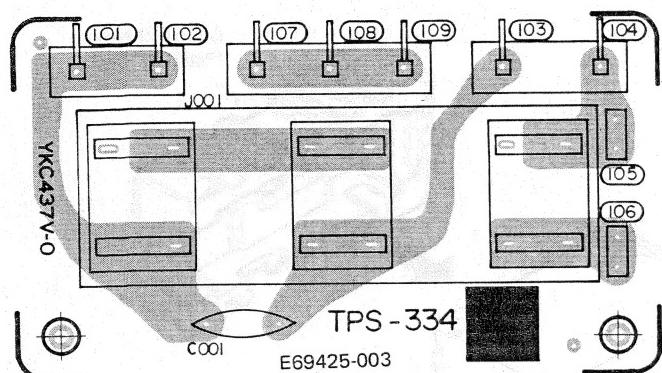


The Marks for Designated Areas

E.....Europe
 A.....Australia
 G.....West Germany
 BS.....U. K.
 P,PG....U. S. Military Market
 UE.....Saudi Arabia
 U.....Other Countries

No mark indicates all areas.

■ TPS-334 □ AC Outlet PC Board Ass'y



Note (1)

PC Board Ass'y	Designated Areas
TPS-334 □ A	U. S. Military Market & Other Countries
TPS-334 □ B	Saudi Arabia

CAPACITORS

▲	ITEM	PART NUMBER	DESCRIPTION			AREA
▲	C001	QCZ9018-103	0.01MF	250V	CERAMIC	A
▲	C001	QCZ9038-103	0.01MF	250V	CERAMIC	B

OTHERS

▲	ITEM	PART NUMBER	DESCRIPTION	AREA
		E65508-002	TAB	
		E67764-302	WRAPPING TERMINAL	
		E67764-402	WRAPPING TERMINAL	
		E67764-403	WRAPPING TERMINAL	
		E69425-002	CIRCUIT BOARD	
▲		QMC0637-004	AC SOCKET	

▲ : SAFETY PARTS

Accessories List

▲	Part Number	Part Name	Q'ty	Description	Areas
	E30580-1402B E30580-1402BBS BT20029C BT20098 BT20046C	Instruction Book Instruction Book Warranty Card Warranty Card Service Information Card	1 1 1 1 1	for Australia for New Zealand	Except BS BS A A P, PG
	BT20048C BT20060 BT20066 BT20064 QZL1008-001	Warranty Card Warranty Card EEC Agency Warranty Card FTZ Information Sheet	1 1 1 1 1		P, PG BS G, BS G G
▲	E04056 QMF51A2-1R25S QMF51A2-2R5S QMF51A2-2R0S E67142-T1R25	Siemens Plug Fuse Fuse Fuse Fuse Label	1 1 1 1 1		PG, U P PG, U UE P
	E67142-T2R5 E67142-T2R0 E6581-4 E41202-2 E41202-2B	Fuse Label Fuse Label Envelope Envelope Envelope	1 1 1 1 1	for Fuse & Fuse Label for Instruction Book for Instruction Book	PG, U UE P, PG, UE, U Except BS BS

▲:Safety Parts

E.....Europe
 A.....Australia
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